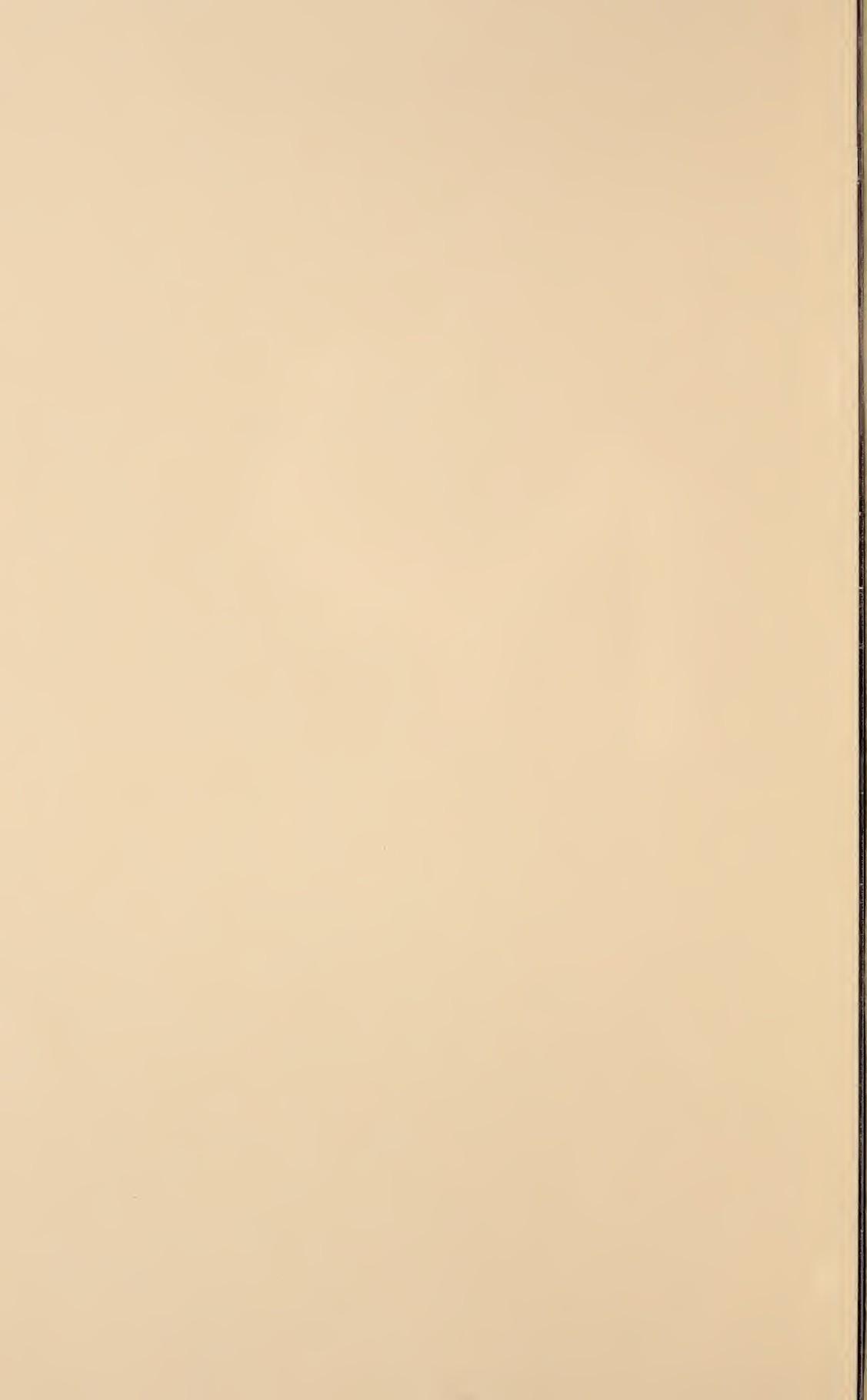


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MAYAGUEZ, PORTO RICO

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AGRICULTURAL EXPERIMENT
STATION

(July, 1900, to March, 1930)

Prepared by
ELIZABETH H. LANGDALE
Office of Experiment Stations



Issued June, 1930

PORTO RICO AGRICULTURAL EXPERIMENT STATION, MAYAGUEZ

[Under the supervision of the Office of Experiment Stations, United States Department of Agriculture]

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**PORTO RICO AGRICULTURAL EXPERIMENT STATION
MAYAGUEZ, P. R.**

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Washington, D. C.

June, 1930

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By ELIZABETH H. LANGDALE, *Office of Experiment Stations*

CONTENTS

	Page		Page
Annual reports -----	1	Circulars in English-----	4
Bulletins in English-----	2	Circulars in Spanish-----	5
Bulletins in Spanish-----	3	Subject index-----	6

ANNUAL REPORTS

FIRST ANNUAL REPORT, 1901.

Establishment of Station and General Statement of Station Work. F. D. Gardner, Special Agent in Charge. Pp. 381-415, pls. 33-37. (Reprint from Ann. Rpt. Office of Expt. Stations, 1901.)

SECOND ANNUAL REPORT, 1902.

General Statement of Station Work. F. D. Gardner, Special Agent in Charge. Pp. 331-357, pls. 28-35, fig. 1. (Reprint from Ann. Rpt. Office of Expt. Stations, 1902.)

THIRD ANNUAL REPORT, 1903.

General Statement of Station Work. F. D. Gardner, Special Agent in Charge. Pp. 419-468, pls. 18-23. (Reprint from Ann. Rpt. Office of Expt. Stations, 1903.)

FOURTH ANNUAL REPORT, 1904.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 383-424, pls. 16-20. (Reprint from Ann. Rpt. Office of Expt. Stations, 1904.)

FIFTH ANNUAL REPORT, 1905.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 47, pls. 7.

SIXTH ANNUAL REPORT, 1906.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 32, pls. 3.

SEVENTH ANNUAL REPORT, 1907.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 55, pls. 3, figs. 2.

EIGHTH ANNUAL REPORT, 1908.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 44, pls. 5.

NINTH ANNUAL REPORT, 1909.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 43, pls. 3.

TENTH ANNUAL REPORT, 1910.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 44, pls. 3.

ELEVENTH ANNUAL REPORT, 1911.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 44, pls. 4.

TWELFTH ANNUAL REPORT, 1912.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 44, pls. 5.

THIRTEENTH ANNUAL REPORT, 1913.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 34, pls. 3.

FOURTEENTH ANNUAL REPORT, 1914.

General Statement of Station Work. David W. May, Special Agent in Charge. Pp. 35, pls. 3.

FIFTEENTH ANNUAL REPORT, 1915.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 45, pls. 3.

SIXTEENTH ANNUAL REPORT, 1916.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 31, pls. 5.

SEVENTEENTH ANNUAL REPORT, 1917.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 40, pls. 4.

EIGHTEENTH ANNUAL REPORT, 1918.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 24, pls. 2.

NINETEENTH ANNUAL REPORT, 1919.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 37, pls. 4.

TWENTIETH ANNUAL REPORT, 1920.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 39, pls. 6.

TWENTY-FIRST ANNUAL REPORT, 1921.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 27, pls. 4.

TWENTY-SECOND ANNUAL REPORT, 1922.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 18, pls. 4, figs. 6.

TWENTY-THIRD ANNUAL REPORT, 1923.

General Statement of Station Work. David W. May, Agronomist in Charge. Pp. 18, pls. 4.

TWENTY-FOURTH ANNUAL REPORT, 1924.

General Statement of Station Work. David W. May, Director. Pp. 29, figs. 15.

TWENTY-FIFTH ANNUAL REPORT, 1925.

General Statement of Station Work. David W. May, Director. Pp. 40, figs. 13.

TWENTY-SIXTH ANNUAL REPORT, 1926.

General Statement of Station Work. David W. May, Director. Pp. 31, figs. 11.

TWENTY-SEVENTH ANNUAL REPORT, 1927.

General Statement of Station Work. David W. May, Director. Pp. 31, figs. 6.

TWENTY-EIGHTH ANNUAL REPORT, 1928.

General Statement of Station Work. David W. May, Director. Pp. 38, figs. 9.

BULLETINS IN ENGLISH

- 1.—September 10, 1902. The Agricultural Experiment Station of Porto Rico: Its Establishment, Location, and Purpose. Frank D. Gardner, Special Agent in Charge. Pp. 15, pls. 4.
- 2.—September 13, 1902. The Changa, or Mole Cricket (*Scapteriscus didactylus*). O. W. Barrett, Entomologist and Botanist. Pp. 20. fig. 1.
- 3.—September 8, 1903. Soil Survey from Arecibo to Ponce, Porto Rico. Clarence W. Dorsey, Louis Mesmer, and Thomas A. Caine, Assistants in the Bureau of Soils, U. S. Department of Agriculture. Pp. 53, pls. 4, fig. 1, map 1. (Reprinted from Rpt. of Field Operations of the Bureau of Soils, 1902.)
- 4.—May 16, 1904. Propagation and Marketing of Oranges in Porto Rico. H. C. Henricksen, Assistant Horticulturist. Pp. 24, pls. 6, figs. 4.
- 5.—December 5, 1904. Tobacco Investigations in Porto Rico During 1903-4. J. Van Leenhoff, Jr., Tobacco Expert. Pp. 44, pls. 5, fig. 1.
- 6.—April 25, 1905. The Yautias, or Taniers, of Porto Rico. O. W. Barrett, Botanist and Entomologist. Pp. 27, pls. 4.

- 7.—February 1, 1906. Vegetable Growing in Porto Rico. H. C. Henricksen, Horticulturist. Pp. 58, pls. 10, figs. 2.
- 8.—April 6, 1909. Pineapple Growing in Porto Rico. H. C. Henricksen and M. J. Iorns, Horticulturists. Pp. 42, pls. 6.
- 9.—April 4, 1910. Sugar Cane in Porto Rico. D. W. May, Special Agent in Charge. Pp. 40, pls. 3.
- 10.—May 8, 1911. Insects Injurious to Citrus Fruits and Methods for Combating Them. W. V. Tower, Entomologist. Pp. 35, pls. 5.
- 11.—November 7, 1911. Relation of Calcareous Soils to Pineapple Chlorosis. P. L. Gile, Chemist. Pp. 45, pls. 2.
- 12.—March 12, 1913. Lime-Magnesia Ratio as Influenced by Concentration. P. L. Gile, Chemist. Pp. 24, pls. 4.
- 13.—October 20, 1913. Studies on Acid Soils of Porto Rico. Oscar Loew, Physiologist. Pp. 23, fig. 1.
- 14.—March 19, 1914. The Red Clay Soil of Porto Rico. P. L. Gile, Chemist, and C. N. Ageton, Assistant Chemist. Pp. 24, pl. 1.
- 15.—May 29, 1914. Porto Rican Beekeeping. E. F. Phillips, In-Charge Bee Culture Investigations, Bureau of Entomology, U. S. Department of Agriculture. Pp. 24, pls. 2.
- 16.—September 17, 1914. The Effect of Strongly Calcareous Soils on the Growth and Ash Composition of Certain Plants. P. L. Gile, Chemist, and C. N. Ageton, Assistant Chemist. Pp. 45, pls. 4.
- 17.—February 9, 1915. Fungus Diseases of Coffee in Porto Rico. G. L. Fawcett, Plant Pathologist. Pp. 29, Pls. 8.
- 18.—May 14, 1915. Citrus Fertilization Experiments in Porto Rico. C. F. Kinman, Horticulturist. Pp. 33, pls. 2.
- 19.—January 22, 1916. Cover Crops for Porto Rico. C. F. Kinman, Horticulturist. Pp. 32, pls. 8.
- 20.—November 9, 1916. Experiments on the Supposed Deterioration of Varieties of Vegetables in Porto Rico with Suggestions for Seed Preservation. C. F. Kinman, Horticulturist, and T. B. McClelland, Assistant Horticulturist. Pp. 30, figs. 11.
- 21.—March 15, 1917. Some Profitable and Unprofitable Coffee Lands. T. B. McClelland, Assistant Horticulturist. Pp. 13, pls. 2, figs. 5.
- 22.—June 29, 1917. Effect of Different Methods of Transplanting Coffee. T. B. McClelland, Assistant Horticulturist. Pp. 11, pl. 1.
- 23.—February 12, 1918. The Changa or West Indian Mole Cricket. R. H. Van Zwaluwenburg, Entomologist. Pp. 28, pls. 3.
- 24.—February 4, 1918. The Mango in Porto Rico. C. F. Kinman, Horticulturist. Pp. 30, pls. 11.
- 25.—July 8, 1918.—The Bat Guanos of Porto Rico and Their Fertilizing Value. P. L. Gile, Chemist, and J. O. Carrero, Assistant Chemist. Pp. 66.
- 26.—April 17, 1919. Vanilla: A Promising New Crop for Porto Rico. T. B. McClelland, Horticulturist. Pp. 32, pls. 3, figs. 4.
- 27.—May 24, 1921. Yam Culture in Porto Rico. C. F. Kinman, Horticulturist. Pp. 22, pls. 6.
- 28.—December 14, 1921. The Coffee Leaf Spot (*Stilbella flava*) in Porto Rico. T. B. McClelland, Horticulturist. Pp. 12, pls. 4.
- 29.—December, 1922. Dairying in Porto Rico. D. W. May, Agronomist in Charge. Pp. 19, pls. 4.
- 30.—June, 1924. Coffee Varieties in Porto Rico. T. B. McClelland, Horticulturist. Pp. 27, pls. 11.
- 31.—November, 1926. Experiments with Fertilizers for Coffee in Porto Rico. T. B. McClelland, Horticulturist. Pp. 34, pls. 3, figs. 18.
- 32.—June, 1928. Effect of Topping on Yield of Coffee in Porto Rico. T. B. McClelland, Horticulturist. Pp. 8, figs. 5.
- 33.—March, 1930. Citrus Culture in Porto Rico. H. C. Henricksen, Agriculturist. Pp. 34, figs. 16.

BULLETINS IN SPANISH¹

- 1.—10 de septiembre de 1902. La Estación de Experimentos Agrícolas de Puerto Rico, su Establecimiento, Sitio y Propósito. Frank D. Gardner, Agente Especial Encargado. Pp. 15, pls. 4.
- 2.—10 de septiembre de 1902. La Changa, ó Grillo-talpa (*Scapteriscus didactylus*) en Puerto Rico. O. W. Barrett, Entomólogo y Botánico, Estación de Experimentos Agrícolas de Puerto Rico. Pp. 20, fig. 1.

¹ No subject index of Spanish publications.

- 3.—8 de septiembre de 1903. Reconocimiento de Terrenos Desde Arecibo á Ponce, Puerto Rico. Clarence W. Dorsey, Louis Mesmer y Thomas A. Caine, Ayudantes en el Bureau de Terrenos, Departamento de Agricultura, E. U. A. Pp. 54, pls. 4, fig. 1. Mapa.
- 4.—16 de mayo, 1904. Propagación y Venta de Chinas (Naranjas) en Puerto Rico. H. C. Henricksen, Especialista de Hortaliza. Pp. 26, pls. 6, figs. 4.
- 5.—5 de diciembre, 1904. Investigaciones Sobre el Tabaco en Puerto Rico Durante 1903-4. J. Van Leenhoff, Jr, Especialista de Tabacos. Pp. 47, portada, pls. 5, fig. 1.
- 6.—25 de abril, 1905. Las Yautias de Puerto Rico. O. W. Barrett, Botánico y Entomólogo, Estación de Experimentos Agrícolas de Puerto Rico. Pp. 15, pls. 4.
- 7.—25 de noviembre de 1906. El Cultivo de Legumbres en Puerto Rico. H. C. Henricksen, Horticultor, Estación de Experimentos Agrícolas de Puerto Rico. Pp. 64, pls. 10, figs. 2.
- 8.—20 de enero de 1909. Siembra de la Piña en Puerto Rico. H. C. Henricksen y M. J. Iorns, Horticultores. Pp. 48, pls. 6.
- 9.—4 de abril de 1910. La Caña de Azúcar en Puerto Rico. D. W. May, Agente Especial Encargado. Pp. 44, pls. 3.
- 10.—27 de enero de 1911. Insectos Perjudiciales á Frutas del Género Citrus y Medios de Combatirlos. W. V. Tower, Entomólogo. Pp. 36, pls. 5.
- 11.—24 de junio de 1913. Relación entre los Terrenos Calcáreos y la Clorosis de la Piña. P. L. Gile, Químico. Pp. 53, frontispicio, pls. 2.
- 12, 13, and 14.—No Spanish edition.
- 15.—28 de mayo de 1915. La Apicultura Portorriqueña. E. F. Phillips, Encargado de las Investigaciones Apícolas, Negociado de Entomología, Departamento de Agricultura de los Estados Unidos. Pp. 28, pls. 2.
- 16.—No Spanish edition.
- 17.—15 de octubre de 1914. Enfermedades del Café Causadas por Hongos en Puerto Rico. G. L. Fawcett, Patólogo de Plantas. Pp. 31, pls. 8.
- 18.—10 de septiembre de 1914. Experimentos con Abono en Árboles del Género Citrus en Puerto Rico. C. F. Kinman, Horticultor. Pp. 34, pls. 2, diagrams 2.
- 19.—16 de agosto de 1915. Plantas para Proteger y Enriquecer los Terrenos de Puerto Rico. C. F. Kinman, Horticultor. Pp. 30, pls. 8.
- 20.—19 de febrero de 1916. Experimentos Sobre el Supuesto Deterioro de Diferentes Legumbres en Puerto Rico, con Indicaciones para la Preservación de la Semilla. C. F. Kinman, Horticultor y T. B. McClelland, Horticultor Ayudante. Pp. 32, figs. 11.
- 21.—19 de febrero de 1916. Terrenos Productivos e Improductivos de Café. T. B. McClelland, Horticultor Ayudante. Pp. 15, pls. 2, figs. 5.
- 22.—30 de enero de 1917. Efecto de Diferentes Métodos de Trasplantar Café. Pp. 12, pl. 1.
- 23, 24, 25, 26, and 27. No Spanish editions.
- 28.—Diciembre de 1922. La Mancha de la Hoja del Café (*Stilbella flava*) en Puerto Rico. T. B. McClelland, Horticultor. Pp. 9, pls. 4.
- 29.—4 de enero de 1924. Las Vaquerías en Puerto Rico. D. W. May, Agrónomo Encargado. Pp. 16, pls. 4.

CIRCULARS IN ENGLISH

- 1.—No English edition.
- 2.—January 2, 1904. The Condition of the Coffee Industry in Porto Rico. J. W. Van Leenhoff, Coffee Expert. Pp. 2.
- 3.—March 28, 1904. Sea Island Cotton in Porto Rico. R. M. Walker, President, Walker Cotton and Industrial Co. Note by Frank D. Gardner, Special Agent in Charge. Pp. 4.
- 4.—May 9, 1904. Control of the Brown Ant (*Solenopsis geminata*) in Orange Orchards. O. W. Barrett, Entomologist and Botanist. Pp. 3.
- 5.—September, 1904. Coffee Planting in Porto Rico. J. W. Van Leenhoff, Coffee Expert. Pp. 14, figs. 6.
- 6.—December 22, 1906. Fertilizers. D. W. May, Special Agent in Charge. Pp. 16.
- 7.—No date. Control of the Brown Ant (*Solenopsis geminata*) and the Mealy Bug (*Pseudococcus citri*) in Pineapple Plantations. W. V. Tower, Entomologist. Pp. 3.
- 8.—March, 1909. Picking and Packing Citrus Fruits. M. J. Iorns, Horticulturist. Pp. 18, figs. 2.
- 9.—April, 1909. The Catalase of Soils. D. W. May and P. L. Gile. Pp. 13.

- 10.—1909. Some Principles in Manuring with Lime and Magnesia. Oscar Loew. Pp. 15.
- 11.—July, 1909. Soil Disinfection in Agriculture. Oscar Loew. Pp. 13.
- 12.—April, 1910. On the "Sick" Soils of Porto Rico. Oscar Loew. Pp. 24.
- 13.—June, 1911. Bee Keeping in Porto Rico. W. V. Tower. Pp. 31, pl. 1.
- 14.—June, 1911. A Study of Mosquitoes in San Juan, Porto Rico. W. V. Tower. Pp. 23, fig. 1.
- 15.—March, 1912. Suggestions on Coffee Planting for Porto Rico. T. B. McClelland. Pp. 26, pls. 4.
- 16.—February 26, 1918. Rearing Queen Bees in Porto Rico. R. H. Van Zwaluwenburg, Entomologist, and Rafael Vidal. Pp. 12, figs. 5.
- 17.—June 27, 1918. Some Means of Controlling Insects, Fungi, and Other Pests in Porto Rico. R. H. Zwaluwenburg, Entomologist, and H. E. Thomas, Plant Pathologist. Pp. 30.
- 18.—September 2, 1920. The Selection of Seed Corn in Porto Rico. H. C. Henricksen, Specialist in Farm Management. Pp. 22, figs. 7.
- 19.—February, 1921. Poultry Keeping in Porto Rico. H. C. Henricksen, Specialist in Farm Management. Pp. 22, figs. 14.
- 20.—November 2, 1921. Mosquito Survey in Mayaguez. W. V. Tower, Entomologist. Pp. 10, pls. 4.

CIRCULARS IN SPANISH

- 1.—26 de octubre de 1903. Sansevieria. O. W. Barrett, Botánico y Entomólogo. Pp. 4.
- 2.—No Spanish edition.
- 3.—28 de marzo de 1904. El Algodon "Sea-Island" en Puerto Rico. R. M. Walker, Presidente de la Walker Cotton and Industrial Co. Nota por Frank D. Gardner, Agente Especial Encargado. Pp. 4.
- 4.—9 de mayo de 1904. Remedios contra la Hormiga Brava (*Solenopsis geminata*) en las Plantaciones de Chinas. O. W. Barrett, Botánico y Entomólogo. Pp. 3.
- 5.—Septiembre, 1904. La Siembra del Café en Puerto Rico. J. W. Leenhoff, Especialista de Café. Nota por Frank D. Gardner. Pp. 15, figs. 6.
- 6.—10 de junio de 1907. Fertilizadores ó Abonos. D. W. May, Agente Especial Encargado. Pp. 18.
- 7.—No date. Medio de Combatir la Hormiga Brava (*Solenopsis geminata*) y el Piojo de Bolsa Blanca ó Queresa (*Pseudococcus citri*) en los Piñales. W. V. Tower, Entomólogo. Pp. 4.
- 8.—Junio, 1909. Recolección y Empaque de Frutas del Género Citrus. M. J. Iorns, Horticultor. Pp. 19, figs. 2, diagrams 2.
- 9, 10, 11, and 12.—No Spanish edition.
- 13.—Junio, 1911. La Apicultura en Puerto Rico. W. V. Tower, Entomólogo. Pp. 39, pl. 1.
- 14.—Junio, 1911. Estudio acerca de los Mosquitos en San Juan, P. R. W. V. Tower, Entomólogo. Pp. 25, fig. 1.
- 15.—Octubre, 1914. Indicaciones Acerca de la Siembra de Café en Puerto Rico. T. B. McClelland, Horticultor Ayudante. Pp. 23, pls. 4.
- 16.—18 de octubre de 1918. La Cría de Abejas-Reinas en Puerto Rico. R. H. Van Zwaluwenburg, Entomólogo, y Rafael Vidal. Pp. 12, figs. 5.
- 17 and 18.—No Spanish edition.
- 19.—Octubre de 1921. La Crianza de Aves en Puerto Rico. H. C. Henricksen, Especialista en Administración de Fincas. Pp. 22, figs. 14.

SUBJECT INDEX

NOTE.—B, Bulletin; C, Circular; R, Report

- Abacá. (*See* Manila hemp.)
 Abattoirs, R 1909, p. 40.
 Abelluelo. (*See* *Colubrina ferruginosa*.)
 Abercrombie, attacking San Juan, B 3, p. 8.
Aberia caffra. (*See* Kei apple.)
Acacia—
amarilla. (*See* Lebbek tree.)
melanoxylo for reforestation, R 1903, p. 438.
mollissima. (*See* Wattle, black.)
neriifolia for reforestation, R 1903, p. 438.
pycnantha for reforestation, R 1903, p. 438.
 sp. as nurse crop, R 1927, p. 2.
 sp. as source of honey, B 15, p. 15.
Acalypha mosaica, fungus disease, B 17, p. 17.
 Acanthocephala in animals, R 1926, p. 31; 1927, p. 27.
 Aceituna for reforestation, R 1903, p. 438.
 Acetate of lead. (*See* Lead acetate.)
 Achiotilla fungus disease, B 28, p. 7.
Achras sapota. (*See* Sapodilla tree.)
 Acids, compatibility chart, C 17, p. 23.
 Acridiidae. (*See* Grasshoppers.)
Acerista monticola leaves, uses, R 1903, p. 437.
Aerocomia media. (*See* Corozo palm.)
Actinomyces odorifera in soils, C 11, p. 11.
Actitis macularia. (*See* Putilla.)
Adiantum sp., B 17, p. 17.
Adjuntas—
 altitude, B 3, p. 11.
 clay. (*See* Soils, clay, red.)
 Adobe, R 1927, p. 5.
Aedes mediovittata, C 14, p. 6.
Aedes (Stegomyia) aegypti. (*See* Mosquitoes, yellow fever.)
Aedes (Stegomyia) calopus. (*See* Mosquitoes, yellow fever.)
 Aeration of soils. (*See* Soil aeration.)
Eschynomene americana. (*See* Yerba ro-sario.)
Agallia tenella on beans, R 1903, p. 448.
 Agati as cover crop, R 1917, p. 5.
Agave grandiflora. (*See* Gallito.)
Agave rigidula—
 introduction, R 1904, p. 395.
sisalana. (*See* Sisal.)
Agricultural—
 analysis, principles, B 25, p. 9.
 Extension Notes, R 1919, pp. 14, 34; 1920, p. 37; 1921, pp. 6, 27; 1922, p. 16.
 instruction and technology, R 1917, p. 38; 1918, p. 23; 1919, pp. 35, 36; 1920, p. 37; 1922, p. 16.
 labor. (*See* Labor problems.)
 machinery. (*See* Machinery.)
 organizations, R 1912, p. 11.
 possibilities in Porto Rico, R 1904, p. 386.
 production, R 1901, p. 394; 1911, p. 13; 1916, p. 5; 1919, p. 5.
 products, manufacture, R 1916, p. 9.
 statistics in 1917-18, R 1918, p. 21.
Agriculture—
 conditions and needs, B 3, pp. 8, 50; R 1901, p. 395; 1905, p. 7; 1906, p. 5; 1907, p. 7; 1908, pp. 7, 8; 1911, p. 13; 1915, p. 8.
 relation to cattle industry, B 29, pp. 3, 10; R 1920, p. 7.
 tropical, R 1905, p. 7; 1910, p. 14; 1911, p. 10; 1912, p. 7; 1919, p. 6.
 World War effect. (*See* War, World.)
 Agriculturists' memorial. (*See* Memorial.)
 Aguacate. (*See* Avocados.)
 Aguacatillo for reforestation, R 1903, p. 438.
 Air-sac mite on poultry, R 1928, p. 36.
Ajuga reptans. (*See* Bugle weed.)
 Akee, R 1904, p. 393; 1905, p. 37; 1909, p. 22.
Alabama argillacea on cotton, R. 1905, pp. 11, 23; 1923, p. 13.
Albizia—
julibrissin for reforestation, R 1903, p. 438.
lebbeck. (*See* Lebbek tree.)
moluccana as coffee shade, R 1910, p. 40.
stipulata as coffee shade, R 1910, p. 40.
Albugo ipomoeæ pandurancæ on sweet-potatoes, R 1925, p. 39.
 Albumin in coffee pulp, R 1907, p. 53.
Alcohol—
 as organic food in denitrification, B 13, p. 12.
 denatured, R 1908, p. 10.
Aleurites—
cordata. (*See* Chinese wood-oil.)
fordii. (*See* Chinese wood-oil.)
moluccana. (*See* Candlenut.)
trisperma, oil constants, R 1927, pp. 2, 3.
Aleurodicus minima on guava, R 1903, p. 446.
Aleyrodes—
howardi. (*See* Woolly white fly.)
 sp. on peppers and tomatoes, R. 1907, p. 36.
Alfalfa—
 as forage crop, R 1905, p. 15; 1906, p. 14; 1907, p. 13; 1912, p. 44; 1918, p. 33; 1925, p. 4.
 culture, R 1902, pp. 337, 341; 1903, pp. 421, 423; 1921, p. 22; 1928, p. 5.
 for coffee lands, C 5, p. 4.
 insect pests, R 1903, p. 448.
 on acid soil, B 13, p. 8.
Algae—
 potassium oxalate effect, C 10, p. 6.
 sodium fluoride effect, C 10, p. 7.
Algarrobo—
 as source of honey, B 15, p. 13.
 as stock feed, R 1927, p. 2.
 culture, R 1915, p. 28.
 for pasture lands, R 1918, p. 8.
 Alkalies, compatibility chart, C 17, p. 23.
Alligator pear. (*See* Avocados.)
Allium porrum on calcareous soil, B 16, p. 10.
 Almácigo, R 1903, p. 443.
Almendrón—
cimarrón for reforestation, R 1903, p. 438.
 for reforestation, R 1903, p. 438.
 Almond insect pests, R 1912, p. 35.
 Almonds, R 1907, p. 28.
 Almud. (*See* Weight.)
Alocasia—
batavensis, R 1903, p. 432.
macrorhiza, B 6, p. 18; R 1904, p. 393.
marshallii, R 1903, p. 432.
 Alonso clay. (*See* Soils, clay.)
Alternaria brassicæ on cabbage, R 1925, p. 36.
 Aluminum cream for budding stock identification, B 33, p. 10; R 1928, p. 27.
 Amapola. (*See* Lily, Barbados.)
 Amaryllis at Rio Piedras, R 1902, pp. 337, 342.

- Amatungula, R 1903, p. 441; 1905, p. 36; 1908, p. 22.
Ameiva exul. (See Higuana.)
 Amido compounds in cacao, R 1907, p. 47.
Ammonia—
 affecting seed germination, R 1905, p. 10.
 elements in, C 6, p. 7.
Ammoniacal copper carbonate solution—
 affecting fruit, R 1906, p. 20.
 fungicidal value, C 17, p. 27; B 7, p. 17; R 1903, p. 456.
Ammonium—
 alum for cacao bean, R 1926, p. 7.
 sulphate. (See Sulphate of ammonia.)
Amaba—
timax in soils, R 1912, p. 13.
terricola in soils, R 1912, p. 13.
Amphiacusta caraibea on seedlings, R 1916, p. 26.
Anacardium—
occidentale. (See Cashew apple.)
rhinocarpus. (See Cashew, wild.)
Anamomis caryophyllata. (See Malagueta tree.)
Anamú, fungus disease, B 17, pp. 17, 18.
Anastrepha—
acidusa on mangoes, R 1911, p. 34.
fraterculus on mangoes, B 24, p. 24; R 1912, p. 36.
fraterculus on pomarosa, R 1917, p. 34.
fraterculus parasites, R 1912, p. 36.
 sp., host plants, R 1912, p. 36.
Anatto. (See Annatto tree.)
Andira—
inermis. (See Moca tree.)
jamaicensis. (See Moca tree.)
Anemia in Porto Rico, R 1906, p. 7; 1912, p. 17.
Aneurism in horses, R 1928, p. 36.
Ankylostomiasis, R 1925, pp. 22, 24 1926, p. 30.
Ankylostomum—
caninum in the cat, R 1925, p. 23.
caninum in the dog, R 1925, p. 23; 1927, p. 27.
 sp. in the cat, R 1927, p. 27.
Annatto tree, R 1903, p. 441; 1905, p. 36.
Annona—
cherimolia. (See Cherimoyer.)
glabra. (See Pond apple.)
montana. (See Custard apple, wild.)
muricata. (See Soursop.)
reticulata. (See Custard apple.)
squamosa. (See Sweetsop.)
***Anolis* spp.** (See Lizards.)
Anopheles—
albimanus. (See Mosquitoes, malarial.)
grahamii. (See Mosquitoes, malarial.)
"Ant cow." (See *Lecanium hemisphaericum*.)
Antiseptics, use in tree surgery, B 33, p. 29.
Ants—
 black, in orange groves, R 1903, p. 459.
 brown, in orange groves, C 4; B 10, p. 11; R 1903, p. 445; 1904, p. 388; 1905, p. 28.
 brown, in pineapple plantations, C 7; R 1906, p. 27.
 in apiaries, C 13, p. 29.
 on cacao, R 1913, p. 28.
 on citrus, B 10, p. 19.
 on coffee, R 1910, p. 32; 1911, p. 30; 1912, pp. 29, 34; 1913, p. 23; 1915, p. 42.
 on guama, R 1910, p. 32; 1911, p. 30; 1913, p. 23; 1914, p. 34.
 on seagrape trees, R 1912, p. 34.
 on "tachuelo" trees, R 1912, p. 34.
 poisons, C 17, pp. 5, 7, 10, 18; B 10, p. 31; R 1903, p. 443; 1908, p. 28.
 red, attacking changa, B 23, p. 17.
 white, C 17, p. 5; R 1903, p. 443; 1904, p. 396; 1915, p. 43.
Apate francisca on crops, R 1914, p. 31; 1915, p. 44.
Aphididae on vegetables, R 1907, p. 36.
Aphids—
 in soils, R 1910, p. 17.
 on crops, B 7, p. 38; R 1903, pp. 444, 446, 447, 463; 1904, p. 396; 1913, p. 28; 1915, p. 45; 1920, p. 22.
Aphis enemies, R 1912, p. 37.
Aphis gossypii—
 on cotton, R 1904, p. 396.
 on watermelons, B 7, p. 58.
Apiculture. (See Beekeeping; Bees; Honey.)
Apio, R 1904, p. 393, 394.
Aplanobacter stewarti on corn, R 1925, p. 37.
Apple—
 calabash, R 1903, p. 440.
 guava. (See Guava, cabada.)
 tree yield relation to trunk circumference, B 31, p. 4.
Apples—
 culture, R 1905, p. 35; 1906, p. 24; 1909, p. 20; 1910, p. 28.
 effect of Phytophthora, R 1927, p. 26.
 fertilization, B 31, p. 3.
Apricot tree chlorosis in England, B 11, p. 29.
Araceae, B 6, p. 8.
Arachis hypogaea. (See Peanuts.)
Araña peluda. (See Spider, gray.)
Arawaks, B 6, pp. 10, 11.
Arcella vulgaris in soils, R 1912, p. 13.
Ardisia sp. for reforestation, R 1903, p. 438.
Arduenia strongylina in swine, R 1925, p. 23; 1927, p. 27.
Areca catechu. (See Betel-nut.)
Arenga saccharifera. (See Sugar palm.)
Arouma. (See *Ischnosiphon arouma*.)
Arracacia esculenta. (See Apio.)
Arreján tree for reforestation, R 1903, p. 438.
Arrobas. (See Weight.)
Arrowroot, R 1902, p. 336; 1903, p. 434.
Arroyo tree for reforestation, R 1903, p. 438.
Arsenate of lead. (See Lead arsenate.)
Arsenic, use in insect control, B 2, p. 16; R 1902, p. 350.
Arsenicals, R 1928, p. 10.
Arsenious oxide—
 for tick control, R 1917, p. 31.
 use in Paris green, C 17, p. 5.
Arsenite of lime, insecticidal value, B 10, p. 23.
Artichokes, R 1902, p. 336; 1904, p. 393.
Artocarpus—
integrifolia. (See Jack fruit.)
 sp. (See Breadfruit.)
Asagrea officinalis. (See Cebadilla.)
Ascaridæ sp. in dogs, R 1927, p. 27.
Ascaridia—
lineata in chickens, R 1927, p. 27.
numidae in guinea hens, R 1927, p. 27.
Ascarids in man, R 1928, p. 38.
Ascaris lumbricoides. (See Roundworm in swine.)
Ascochyta nicotianæ on tobacco, R 1904, pp. 397, 418.
Ash—
 of coffee pulp, R 1907, p. 53.
 of green and chlorotic cane leaves, R 1917, p. 14.
 of green and chlorotic pineapple leaves, B 11, p. 34.
 of plants on calcareous soils, B 16.
 of plants methods of analysis, R 1914, p. 13.
Ashes fertilizing value, C 6, p. 6.
Asimina triloba, introduction, R 1904, p. 393.
Asparagus—
 cultural directions, B 7, p. 21.
 culture, R 1902, p. 336.
 diseases, B 7, p. 22.
 marketing, B 7, p. 22.
Asphalt, use in tree surgery, B 33, p. 29.

- Aspidiotus—**
- articulatus* on citrus, R 1903, p. 445.
 - aurantii* on citrus, R 1903, p. 445.
 - destructor* on coconuts, R 1903, p. 447; 1915, p. 45.
 - destructor* parasites, R 1903, p. 447.
 - ficus* on oranges, R 1903, p. 459.
 - hartii* on yams, R 1903, p. 448.
- Asses, R 1901, p. 412; 1907, p. 14.
- Asterolecanium pustulans—**
- on figs, R 1903, p. 446.
 - on silk oak tree, R 1914, p. 35.
- Asters, R 1926, p. 10.
- Atheas nigricornis** on cassava, R 1903, p. 447; 1904, p. 396.
- Australian pine. (*See* Ironwood.)
- Ausubo, B 23, p. 20.
- Auzú tree for reforestation, R 1903, p. 438.
- Averrhoa bilimbi*. (*See* Bilimbi tree.)
- Averrhoa carambola*. (*See* Carambola.)
- Avicennia nitida*. (*See* Mangrove, black.)
- Avocados—**
- as source of honey, C 13, p. 29; B 15, p. 13.
 - canning, R 1925, p. 5.
 - culture, R 1905, p. 34; 1906, p. 21; 1907, p. 24; 1909, p. 21; 1910, p. 28; 1919, p. 21; 1922, p. 7; 1927, p. 13.
 - description, R 1907, p. 18.
 - diseases, R 1903, p. 449; 1907, p. 18; 1925, p. 34; 1927, p. 25; 1928, p. 29.
 - for reforestation, R 1919, p. 11; 1923, p. 2; 1927, p. 2.
 - insect pests, R 1912, p. 36.
 - keeping qualities, R 1907, pp. 18, 19.
 - notes, R 1901, p. 408; 1904, pp. 393; 405; 1907, pp. 18, 19; 1919, p. 8.
 - oil content, R 1901, p. 409; 1907, p. 18.
 - propagation by grafting, R 1924, p. 15.
- Azotobacter—**
- chroococcum*, C 12, p. 9.
 - thermophilum*, B 13, p. 23.
- Azotobacter in soils, B 13, p. 12; R 1910, p. 15; 1912, p. 16.
- Bacillus—**
- anthracoides* in sick soils, C 12, p. 15; R 1909, p. 16.
 - butyricus*, B 13, p. 23; R 1912, p. 16.
 - coli* in decaying coconut buds, R 1924, p. 27; 1925, p. 24.
 - fluorescens liquefaciens*, C 12, p. 15; B 13, p. 16; R 1909, p. 16.
 - methylicus*, C 12, p. 13.
 - mycoides*, C 12, p. 15; B 13, p. 16; R 1909, p. 16.
 - proteus*, C 12, p. 15; B 13, p. 16.
 - solanacearum* on eggplants, B 7, p. 37.
 - solanacearum* on tomatoes. (*See* *Bacillus solanacearum*.)
 - subtilis*, C 12, p. 15; B 12, p. 10; R. 1909, p. 16.
- Bacteria—**
- carbonic acid production in soils by, C 11, p. 3.
 - climatic and freezing effect on, C 12, p. 8.
 - in disinfected soils. (*See* Soils, disinfection.)
 - in soils, C 11, p. 3.
- Bacterium—**
- campestre* control, C 17, p. 26.
 - fluorescens* effect of carbon bisulphide, C 11, p. 5.
 - radicicola*, C 12, p. 9; R 1912, p. 16.
 - solanacearum* of eggplants, R 1923, p. 8.
 - solanacearum* of tomatoes, R 1903, p. 450; 1904, p. 398; 1917, p. 29; 1921, p. 20; 1925, pp. 34, 39.
- Bagasse fertilizing value, C 6, p. 15.
- Bags for insect control, B 23, p. 22; B 24, p. 24; C 17, p. 8.
- Baits, poisoned—
- for crabs, C 17, p. 29.
 - for rats, C 17, p. 29.
- Baits, poisoned—Continued.
- insecticidal value, C 17, pp. 9, 29; B 2, p. 16; B 7, p. 19; B 23, p. 23; R 1902, p. 350.
 - Balantidium coli* in swine, R 1925, p. 23; 1928, p. 36.
 - Balanitophorus minutus* in soils, R 1912, p. 13.
 - Balsam, R 1923, p. 3; 1926, p. 9.
 - Bálsamo, fungus disease, B 28, p. 7.
- Bamboo—
- as windbreak, B 10, p. 17; B 33, p. 21; R 1907, p. 33; 1909, p. 32; 1911, p. 34; 1920, p. 25.
 - for underdrainage. (*See* Drainage.)
- Bananas—**
- as shade for coffee, C 15, p. 24; R 1901, pp. 398, 399; 1911, p. 30.
 - as source of honey, B 15, p. 13.
 - as windbreak, B 10, p. 18; B 33, p. 21; R 1905, p. 25; 1906, p. 21; 1907, p. 33; 1908, p. 33.
 - culture, R 1905, pp. 21, 39; 1907, p. 26; 1909, p. 21; 1911, p. 27; 1916, p. 21.
 - diseases, B 17, p. 13; R 1904, pp. 397, 398; 1906, p. 27; 1910, p. 36; 1912, p. 31; 1925, p. 35; 1927, p. 7.
 - fertilizing elements, R 1927, p. 7.
 - flour, R 1905, p. 22.
 - growing districts, B 3, pp. 18, 19, 21, 24, 25, 31, 32, 33, 34, 37, 40, 48, 49.
 - industry, R 1903, p. 454.
 - insect pests, R 1903, p. 446; 1904, p. 396.
 - propagation, B 3, p. 48; R 1903, p. 431.
 - root fermentation, B 13, p. 11.
 - varieties, B 3, p. 48; R 1903, pp. 431, 432; 1904, p. 389.
 - wilt or Panama disease, R 1915, pp. 34-41; 1916, p. 29; 1919, p. 27; 1921, p. 22; 1922, p. 13; 1923, p. 16; 1924, p. 29; 1925, p. 27.
- (*See also* Plantain.)
- Barbados cherry, R 1903, p. 441; 1905, p. 39; 1907, p. 23; 1908, p. 22.
- Baris torquatus* on eggplants, R 1915, p. 43.
- Barium carbonate for rat control, C 17, p. 29.
- Barley—**
- culture, R 1902, p. 337.
 - lime-magnesia ratio, C 10, pp. 3, 12.
 - on acid soil, B 13, p. 8; R 1908, p. 41.
 - on calcareous soil, B 16, pp. 9, 11.
- Barns for cattle, B 29, p. 13.
- Barrels for corn drying, C 18, p. 22.
- Basket making, notes, R 1919, p. 12.
- Baskets for fruit picking, C 8, p. 7.
- Basiidiomycete, B 17, p. 13.
- Bat guano—
- analysis, R 1903, p. 451; 1908, p. 30; 1915, p. 13.
 - fertilizing value, C 6, p. 6; B 9, p. 25; B 14, p. 12; B 25; R 1911, p. 16; 1913, p. 14; 1914, p. 16; 1915, p. 10; 1916, p. 11.
 - notes, B 3, p. 45.
 - sulfification. (*See* Soils, sulfification.)
- Bauhinia kappleri*. (*See* Flamboyán blanco.)
- Bauhinia* sp., R 1904, p. 395.
- Baumé readings and specific gravity, C 17, p. 16.
- Bay rum tree, R 1903, p. 437.
- Bean tree on calcareous soil, B 16, p. 8.
- Beans—**
- acreage, R 1918, p. 21; 1919, p. 32.
 - as chicken feed, C 19, p. 21.
 - as soil renovators, C 6, p. 7; R 1916, p. 7; 1917, p. 5.
 - as source of honey, B 15, p. 15.
 - as windbreaks, B 33, p. 21.
- breeding, R 1902, p. 338; 1912, p. 27; 1915, p. 27; 1917, p. 35; 1918, pp. 13, 18; 1919, p. 30; 1920, pp. 15, 20; 1921, pp. 10, 15; 1922, pp. 4, 10; 1923, pp. 4, 8; 1926, p. 22.

- Beans—Continued.**
 diseases, B 7, p. 24; C 17, p. 26;
 R 1902, p. 338; 1903, pp. 449, 467;
 1917, pp. 28, 29, 35; 1925, pp.
 31, 36.
 growing districts, B 3, pp. 19, 23, 28;
 importation, R 1916, p. 9; 1917, p. 7.
 insect pests, B 7, p. 24; R 1902,
 pp. 338, 342; 1903, p. 448; 1912,
 p. 34; 1915, p. 42.
 interplanted with cane, R 1916, p. 6;
 1920, p. 6; 1923, p. 1.
 interplanted with coconuts, R 1917,
 p. 21.
 marketing, B 7, p. 23.
 notes, R 1902, p. 336; 1914, p. 25;
 1918, p. 23; 1922, p. 2.
 on acid soil, B 13, p. 8.
 on calcareous soil, B 16, pp. 11, 14,
 15; R 1913, p. 14.
 photoperiodism, R 1925, p. 11; 1926,
 p. 14.
 poisonous, R 1919, pp. 10, 20.
 seed deterioration, B 20, pp. 6, 10,
 27.
 slugs attacking, R 1917, p. 34.
 (*See also specific kinds.*)
Becacina attacking mole cricket, B 23, p.
 18.
Bedbug fumigation, C 17, p. 22.
Beef—
 importation, R 1910, p. 11.
 scraps, R 1909, pp. 40, 42; 1913, p.
 34.
Beefwood. (*See Ironwood.*)
Beeskeeping—
 in Porto Rico, C 13; C 16; B 15; R
 1908, p. 27; 1909, p. 27; 1910, p.
 32; 1911, p. 32; 1912, p. 38; 1914,
 p. 35; 1916, p. 27; 1918, p. 15;
 1919, p. 13; 1920, p. 23; 1921, p.
 25.
 (*See also Bees; Honey.*)
Bees—
 diseases, B 15, p. 20.
 insect pests, C 13, pp. 29, 30.
 pollination by, C 13, p. 5; B 15, p.
 20; R 1908, p. 28; 1911, p. 33.
Beeswax—
 exported from Porto Rico, B 15, p.
 9; R 1919, p. 13.
 for budding tape, B 4, p. 12.
 honey in, C 13, p. 6.
 production possibilities, B 15, p. 21.
Beetle—
 on chard, R 1926, p. 8; 1928, p. 10.
 on citrus, R 1908, p. 25; 1909, p. 28.
 on cucumber, R 1902, p. 339.
 on guava, R 1910, p. 31.
 on sunn hemp, R 1920, p. 26.
 on tobacco, R 1909, p. 26.
 (*See also specific kinds.*)
Beets—
 carbon bisulphide effects, C 11, p. 8.
 culture, B 7, p. 24; R 1902, pp. 336,
 338; 1920, p. 22; 1926, p. 9; 1928,
 p. 10.
 diseases, R 1917, p. 29; 1925, pp. 30,
 36.
 insect pests, R 1902, p. 343; 1915, p.
 42; 1923, p. 14.
 marketing, B 7, p. 25.
 notes, R 1922, p. 2.
 seed deterioration, B 20, pp. 6, 9.
 sugar, B 9, p. 7; R 1905, p. 16.
Beggarweed—
 as forage crop, R 1905, p. 15; 1906,
 p. 14.
 as soil renovators, R 1903, p. 423;
 1914, p. 9.
Begonia—
 diseases, B 17, p. 13.
 notes, R 1905, p. 18; 1926, p. 10.
Bejuco—
 de carro, diseases, B 17, p. 13.
 de mono, fungus disease, B 28, p. 7.
 de paloma, fungus disease, B 28, p. 7.
Bengal bean. (*See Mauritus bean.*)
 Benzene as soil disinfectant, C 11, p. 5.
- Berengena cimarrona. (*See Eggplant, wild.*)
Bermuda grass, B 23, p. 8; R 1903, p. 424;
 1906, p. 14.
Berugillo fungus disease, B 28, p. 7.
Betel-nut, R 1903, p. 441.
Bicuda buceros. (*See "Tachuelo."*)
Bidens spp. as source of honey, B 15,
 p. 15.
Bihai bihai. (*See Plantain, wild.*)
Bilimbi tree, R 1903, p. 440.
Bird boxes, R 1918, p. 17.
Birds—
 changa enemies, B 23, p. 18.
 (*See also specific kinds.*)
Bisulphide of carbon as soil disinfectant,
 R 1910, p. 17.
Bixa orellana. (*See Annatto tree.*)
Blackberries, R 1925, p. 15.
Blackbirds, B 2, p. 17; B 23, p. 18;
 R 1902, p. 351.
Blackheart—
 as source of honey, B 15, p. 15.
 of pineapples. (*See Pineapples, dis-*
eases.)
Blackleg in cattle, R 1910, p. 43.
Blackwood, Australian. (*See Acacia mel-*
anoxylon.)
Blattidae. (*See Cockroaches.*)
Blihia sapida. (*See Akee.*)
Bloodmeal as fertilizer, C 12, p. 7.
Blueberry on acid soil, B 13, p. 8.
Bluegrass—
 as forage crop, R 1906, p. 14.
 culture at Rio Piedras, R 1902, pp.
 337, 340.
Bodo in soils, R 1912, p. 13.
Bøhmeria nivea. (*See Ramie.*)
Bone—
 feed, feeding value and cost, R 1909, p.
 42.
 phosphate, importation, R 1928, p. 8.
Books, protection from insects, C 17, p. 29.
Boophilus—
annulatus caudatus on cattle and goats,
 R 1927, p. 27.
australis. (*See Cattle tick.*)
Borassus sp., fungus disease, R 1925, p. 29.
Bordeaux—
 mixture—
 for cacao diseases, R 1913, p. 27.
 for cane cuttings, B 9, p. 38.
 for citrus diseases, C 17, p. 28;
 B 33, p. 27; R 1917, p. 30.
 for coffee diseases, B 17, p. 10;
 R 1911, p. 37.
 for guava diseases, R 1907, p. 38.
 for tomato diseases, R 1917, p. 29.
 for truck-crop diseases, R 1907,
 p. 35.
 for yam seed treatment, B 27,
 p. 6.
 formulas, C 17, p. 28; B 7, p. 16;
 B 10, p. 31; B 17, p. 10.
 home made v. ready made, R 1914,
 p. 27.
 testing for excess copper sulphate,
 B 7, p. 17.
 oil emulsion as insecticide, R 1922, p.
 14.
 paste, use in tree surgery, B 33, p. 29.
Boriguén, B 6, p. 11.
Boriguén antimosquito league, C 14, p. 21.
Borreria ocimoides. (*See Botoncillo.*)
Botrychus monachus on crops, R 1912, p.
 34.
Botfly larvæ in mules, R 1928, p. 36.
Botoncillo as source of honey, B 15, p. 13.
Botor tetragonoloba, R 1915, p. 29.
Botryosphaeria xanthocephala on pigeon pea,
 R 1925, pp. 32, 38.
Box—
 for corn drying, C 18, p. 22.
 for germinating corn, C 18, p. 17.
Boxes—
 for packing fruit, C 8, p. 16; B 8, p.
 33.
 swarm. (*See Beekeeping.*)

- Brachychiton.** (See *Sterculia diversifolia*.)
Bran, B 29, p. 12; R 1913, p. 34.
Brands, in fruit packing, C 8, p. 15; B 8, p. 33.
Brassica—
napus, on calcareous soil, B 16, p. 10.
oleracea, on calcareous soil, B 16, p. 10.
Brazil nuts, R 1907, p. 28.
Breadfruit—
 culture, R 1905, p. 35; 1908, p. 22.
 diseases, R 1925, pp. 29, 36.
Brick factory, notes, B 1, p. 9; R 1902, p. 332.
Bromelia pinguin, R 1903, p. 448.
Bromeliads on coffee, R 1903, p. 448.
Broomcorn for forage, R 1903, p. 424.
Bruja fungus diseases, B 28, p. 7.
Brush, as windbreak, B 10, pp. 17, 18.
Brussels sprouts, cultural directions, B 7, p. 25.
Bryophyllum—
calycinum. (See *Bruja*.)
pinnatum fungus disease, R 1927, p. 25.
Bucare tree—
 as shade for coffee, C 15, p. 24; R 1913, p. 24; 1916, p. 22; 1926, p. 20.
 as windbreak for citrus, R 1920, p. 25.
 dwarf, as support for vanilla, B 26, p. 9; R 1923, p. 15.
 for reforestation, R 1903, p. 438; 1923, p. 2; 1924, p. 7.
 fungus diseases, R 1925, p. 29.
 interplanted with cacao, R 1904, p. 408; 1905, p. 41.
Buckwheat—
 as poultry feed, R 1909, p. 40.
 carbon bisulphide effects, C 11, p. 8.
 lime-magnesia ratio, C 10, p. 3.
 on acid soil, B 13, p. 8.
 on calcareous soil, B 16, p. 12.
Bud—
 maggot. See *Lonchaea chalybea*.)
 wood selection, B 4, p. 10.
Budding—
 knife, B 4, p. 12.
 stock, identification, R 1928, p. 27.
 tape, formula, B 4, p. 12; R 1904, p. 388.
Bufo—
agua. (See *Toad, giant*.)
marinus. (See *Toad, Surinam*.)
Bugle weed on calcareous soil, B 16, p. 9.
Buhach. (See *Pyrethrum*.)
Building materials. (See *Farm-buildings materials*.)
Bulbs—
 flowering, R 1902, p. 342; 1903, pp. 434, 442.
 (See also *specific kinds*.)
Bunostomum phlebotomum. (See *Hook-worms in cattle*.)
Burning, effect on soils, C 11, p. 4; R 1927, p. 8.
Bursera simaruba. (See *Almácigo*.)
Buteo antillarum. (See *Hawk, West Indian*.)
Butorides virescens cubanus. (See *Martinete*.)
Butter—
 importation, R 1927, p. 7.
 notes, B 29, pp. 4, 15; R 1907, p. 15; 1909, p. 40; 1925, p. 2.
Butterfat yield of cows. (See *Cattle breeding; Dairying*.)
Butterflies, *Hesperid*, on canna, R 1903, p. 433.
Butyric fermentation of soils. (See *Soils, acid*.)
Cabada guava. (See *Guava*.)
Cabbage—
 bacterial black rot, B 7, pp. 27, 56; R 1925, p. 36.
 culture, B 7, p. 25; R 1902, p. 338; 1920, p. 21; 1928, p. 10.
- Cabbage**—Continued.
 diseases, B 7, p. 27; C 17, p. 26; R 1917, p. 28; 1925, p. 36.
 insect pests, B 2, p. 9; B 7, p. 27; R 1902, pp. 338, 343; 1907, p. 35.
 (See also *specific kinds*.)
 marketing B 7, p. 26.
 notes, R 1902, p. 336; 1903, p. 424; 1922, p. 2; 1926, p. 8.
Rhizoctonia ferrugena on. (See *Rhizoctonia ferrugena*.)
 tree. (See *Moca tree*.)
Cable plowing, R 1911, p. 10.
Cacao—
Alligator, R 1903, p. 439.
 as nurse crop, R 1925, p. 3.
Calabacillo, analyses, R 1907, p. 47.
 culture, R 1905, p. 41; 1907, p. 24; 1909, p. 22; 1911, p. 30; 1912, p. 30; 1914, p. 25; 1915, p. 32; 1916, p. 22; 1917, p. 26; 1918, p. 12; 1919, pp. 9, 19.
 curing and fermentation, R 1907, p. 41; 1925, p. 5; 1926, p. 6.
 diseases, R 1903, pp. 465, 466; 1906, p. 22; 1913, p. 26; 1914, p. 29; 1925, p. 29.
 fruit, description, R 1907, p. 43.
 growing in different countries, R 1903, pp. 430, 439; 1913, p. 24.
 insect pests, R 1903, p. 446; 1913, p. 28.
 interplanting, R 1904, p. 403; 1905, p. 41; 1907, p. 23.
 market value, R 1911, p. 31; 1913, p. 23.
 notes, R 1901, p. 411; 1910, p. 40.
 varieties, R 1903, p. 440; 1909, p. 22.
Cachaza fertilizing value, R 1910, p. 23; 1926, p. 25.
Caculo. (See *May beetle*.)
Cadillo. (See *Jute, wild*.)
Casuarina coriaria, R 1904, p. 395; 1905, p. 36.
Cafeillo tree for reforestation, R 1903, p. 438.
Caffein—
 in cacao, R 1907, p. 47.
 in coffee, B 30, p. 6; R 1907, p. 53.
Caimito. (See *Star-apple*.)
Cajanus—
cajan. (See *Pigeon pea*.)
indicus. (See *Pigeon pea*.)
Calabash parasites, R 1903, p. 448.
Caladium colocasia. (See *Taro*.)
Caladiums, R 1903, p. 435; 1905, p. 18.
Calambreña tree, R 1903, p. 441.
Calandra attacking *changas*, B 23, p. 18.
Calandria oryzá—
 on cane, R 1907, p. 37.
 parasites, R 1904, p. 396.
Calathea allouya. (See *Llerén*.)
Calcium—
 arsenite, compatibility table, C 17, p. 23.
 carbonate—
 effect on humus, C 12, p. 10; B 13, p. 13.
 effect on pineapples. (See *Pineapples, chlorosis*.)
 chloride—
 as seed preservative, B 20, p. 26.
 for osteoporosis in horses, R 1910, p. 42.
 in drinking water in Tropics, R 1912, p. 17.
 influence in cacao curing, R 1926, p. 7.
 fertilizing value for pineapples, R 1927, p. 23.
Calendulas, R 1926, p. 10.
Calophyllum calaba. (See *Palo de María*.)
Calopogonium caruleum. (See *Yam bean*.)
Calosoma alternans attacking mole cricket, B 23, p. 17.
Calotropis procera. (See *Indian madár*.)
Calopodes ethlius. (See *Butterflies, Hesperiid*.)

- Camasey**—
blanco, fungus disease, B 28, p. 7.
cimarron, fungus disease, B 28, p. 7.
- Camellia thea.** (See Tea.)
- Campeche.** (See Logwood.)
- Camphor**—
insecticidal value, C 17, p. 20.
tree for reforestation, R 1919, p. 11; 1923, p. 2.
tree, notes, R 1903, p. 441; 1905, p. 36.
- Caña de azucar.** (See Sugarcane as source of honey.)
- Cañafistula** tree for reforestation, R 1903, p. 438.
- Canario de manglar,** B 23, p. 18.
- Canavalia**—
ensiformis. (See Jack bean.)
gladiata. (See Sword bean.)
incurva, culture, R 1915, p. 29.
obtusifolia. (See Mato de la playa.)
rusiosperma, B 19, p. 25.
- Candelillo,** B 17, p. 8.
- Candlenut**—
notes, R 1903, p. 441; 1905, p. 35; 1909, p. 22.
oil constants, R 1927, p. 2.
- Candytuft,** R 1926, p. 10.
- Cane.** (See Sugarcane.)
- Canelo.** (See Cinnamon, wild.)
- Canna, edible**—
culture, R 1902, p. 336; 1904, p. 394.
diseases, R 1903, p. 433; 1904, p. 398.
insect pests, R 1903, p. 433.
starch, R 1904, p. 394.
- Canna edulis.** (See Canna, edible.)
- Cannabis sativa.** (See Indian hemp.)
- Cannas** as ornamentals, R 1905, p. 18.
- Canned goods**, importation, R 1901, p. 395.
- Canning pineapples.** (See Pineapples, canning.)
- Cannon-ball tree,** R 1903, p. 440.
- Cans**; discarded, as mosquito breeders, C 14, p. 9.
- Cantaloupe**—
culture, R 1902, p. 337; 1910, p. 29.
diseases, R 1925, p. 36.
seed deterioration, B 20, pp. 6, 9.
- Caoba.** (See Mahogany.)
- Capá sabána** tree for reforestation, R 1903, p. 438.
- Caparra** founding, B 3, p. 8.
- Capillaria**—
annulata in chickens, R 1927, p. 27.
sp. in cattle, R 1925, p. 23; 1927, p. 27.
- Capnodium citri,** R 1925, p. 36.
- Capromys,** B 6, p. 10.
- Capsid** bug attacking corn-silk fly, R 1917, p. 33.
- Carabidae.** B 2, p. 17; R 1902, p. 351.
- Carambola,** R 1905, p. 36; 1908, p. 19.
- Carap tree,** R 1903, p. 440.
- Carapa guianensis.** (See Carap tree.)
- Carbohydrates**—
in avocados, R 1907, p. 18.
in pineapple leaves, R 1927, p. 21.
in coffee pulp, R 1907, p. 53.
in stock feeds, R 1909, p. 42.
- Carboxylic acid**—
fungicidal and insecticidal value, C 7, p. 2; C 17, pp. 10, 26; B 10, p. 28; R 1903, p. 446.
grades in Porto Rico, B 10, p. 32.
- Carbolineum**—
as roost disinfectant, C 19, p. 20.
as soil disinfectant, R 1909, p. 16; 1923, p. 15.
- Carbon**—
bisulphide—
as anthelmintic, R 1928, p. 37.
cost in Porto Rico, C 17, p. 21; B 2, p. 15.
effect of inhaling, C 11, p. 10.
- Carbon**—Continued.
bisulphide—continued.
effect on catalase of soils, C 9, p. 12.
effect on crops, C 11, pp. 7, 8.
effect on mold, C 11, p. 6.
effect on sick soils, B 14, p. 17.
effect on yield of vegetables, C 11, pp. 8, 9.
fumigation, C 17, p. 20; R 1908, p. 26.
insecticidal value, C 17, p. 20; B 2, p. 15; R 1902, p. 350; 1903, p. 445.
method of applying to soil, C 11, p. 10.
storing, C 11, p. 10.
- tetrachloride**—
as anthelmintic, R 1928, p. 37.
as fumigant, C 17, p. 21.
- Carbonate**—
determination in soils. (See Soils.)
of lime effect on plant growths. (See Soils, calcareous.)
- Carbonic acid production**—
by wheat roots, C 11, p. 3.
in soils by bacteria, C 11, p. 3.
- Cardulovica**—
palmata, R 1903, p. 437; 1914, p. 11; 1919, p. 12.
spp. culture, R 1903, p. 437; 1906, p. 16; 1907, p. 12; 1909, p. 12.
spp. (See also Straw, bleaching.)
- Cariaquillo.** (See Lantana.)
- Carica**—
papaya. (See Papayas.)
quercifolia. (See Papayas.)
spp., R 1920, p. 19.
- Carissa arduina.** (See Amatungula.)
- Carnations,** R 1905, p. 18.
- Carob tree.** (See *Ceratonia siliqua*.)
- Carophilus,** R 1917, p. 33.
- Carrots**—
culture, B 7, p. 27; R 1902, p. 337; 1903, p. 424; 1920, p. 22; 1922, p. 2; 1923, p. 3; 1926, p. 9; 1928, p. 10.
diseases, R 1925, p. 30.
insect pests, R 1923, p. 14.
marketing, B 7, p. 28.
seed deterioration, B 20, p. 29.
- Casaba**—
culture, R 1919, pp. 25, 26.
insect pests, R 1923, p. 14.
(See also Muskmelon culture.)
- "Cashaw."** (See Algarrobo.)
- Cashew**—
apple culture, R 1903, p. 441; 1905, p. 35.
apple insect pests, R 1903, p. 446.
wild, R 1913, p. 25.
- Cassava**—
acreage, R 1918, p. 21; 1919, p. 33.
ash, lime-magnesia ratio, R 1912, p. 22.
cultural tests, R 1904, pp. 391, 392.
diseases, R 1904, pp. 392, 398; 1925, p. 36.
flour, R 1905, p. 22.
on calcareous soil, B 16, p. 26; R 1913, p. 14.
insect pests, R 1903, p. 447; 1904, pp. 392, 396.
notes, B 3, p. 19; R 1905, p. 21.
starch. (See Starch.)
varieties, R 1903, p. 436.
- Cassia**—
chamæcrista. (See Partridge pea.)
fistula. (See Cañafistula tree.)
floribunda for reforestation, R 1903, p. 438.
- occidentalis.* (See Hedionda.)
sp., R 1927, p. 2.
- Cassimiroa edulis.** (See Sapote, Mexican.)
- Castanea vesca.** (See Chestnut tree.)
- Castilla**—
elastica. (See Rubber, Central American.)
lactiflua, R 1912, p. 30.
panamensis, R 1912, p. 30.

- Castor bean plant—**
as windbreak, R 1905, p. 25.
insect pests, R 1906, p. 27.
notes, B 2, p. 13; R 1902, p. 337.
- Casuarina—**
cunninghamella for reforestation, R 1924, p. 7.
equisetifolia. (*See Ironwood.*)
- Catalase—**
of pineapple plants, B 11, p. 40; R 1927, p. 22.
of soils, C 9.
- Catalpa—**
ovata for reforestation, R 1903, p. 438.
speciosa for reforestation, R 1903, p. 438.
- Catáño, C** 14, p. 11.
- Catarrh—**
of horses, R 1909, p. 37.
of poultry, R 1909, p. 39.
- Cats, parasites**, R 1925, p. 23; 1927, p. 27.
- Cattle—**
Ayrshire, B 29, p. 6.
blackleg, R 1910, p. 43.
breeding, R 1908, p. 38; 1909, p. 38; 1910, p. 42; 1911, p. 41; 1912, p. 40; 1913, p. 30; 1920, p. 8; 1921, p. 3; 1923, p. 2; 1924, p. 4; 1925, p. 1; 1926, p. 2; 1928, pp. 2, 3, 4.
dipping, B 29, p. 9; R 1917, p. 31; 1918, pp. 9, 23; 1919, p. 37; 1920, p. 23.
Guernsey, B 29, p. 6; R 1928, p. 4.
Holstein, B 29, p. 7; R 1928, p. 3.
improving and selecting, B 29, pp. 7, 8; R 1927, p. 6.
introduced, care, R 1906, p. 10; 1920, p. 8.
introduced, number and value, R 1928, p. 4.
Jersey, B 29, p. 5; R 1928, p. 4.
liver fluke. (*See Liver fluke.*)
"llaga" affecting. (*See Lлага.*)
native, R 1901, pp. 412, 413; 1906, p. 10; 1921, p. 2; 1925, p. 1; 1927, p. 6; 1928, p. 2.
notes, R 1901, p. 414; 1904, p. 386; 1905, p. 19; 1907, p. 14; 1908, pp. 15, 37; 1909, p. 13; 1915, p. 11; 1916, p. 10; 1918, p. 22.
parasites, R 1925, p. 23; 1926, p. 31; 1927, pp. 27, 28; 1928, p. 36.
Shorthorn, R 1928, p. 3.
skin disease, R 1925, p. 24.
tick fever, R 1906, p. 10; 1925, p. 24.
tick, C 17, p. 17; B 29, p. 8; R 1905, p. 19; 1907, p. 15; 1908, pp. 15, 38; 1914, p. 10; 1915, pp. 11, 42; 1916, p. 25; 1917, p. 31; 1918, pp. 9, 17, 21, 23; 1919, p. 34; 1920, pp. 8, 23; 1921, pp. 3, 25; 1922, p. 3; 1923, p. 2; 1926, p. 2.
tuberculosis, B 29, p. 9.
water requirements, B 29, p. 12.
zebu characteristics, R 1913, pp. 30, 31; 1928, p. 3.
- Cattle-zebu crossing.** (*See Cattle breeding.*)
- Cauliflower—**
culture, B 7, p. 28; R 1928, p. 10.
notes, R 1902, p. 337; 1926, p. 8.
- Cayenne grass as forage crop**, R 1920, p. 39.
- Cebadilla, insecticidal value**, C 17, p. 16.
- Cedar—**
insecticidal value, C 17, p. 20.
purple. (*See Cedro macho.*)
- Cedrela odorata.** (*See Cedro hembro.*)
- Cedro—**
hembro for reforestation, R 1903, p. 438.
macho for reforestation, R 1903, p. 438.
- Ceiba casearia.** (*See Silk cotton tree.*)
- Ceiba tree**, R 1912, p. 29.
- Celery—**
culture, B 7, p. 28; R 1902, p. 337; 1926, p. 9; 1928, p. 10.
- Celery—Continued.**
diseases, B 7, p. 31.
insect pests, R 1923, p. 14.
irrigation. (*See Irrigation.*)
marketing, B 7, p. 30.
- Cellulose in coffee pulp**, R 1907, p. 53.
- Cement—**
and "tosca" for building, R 1927, p. 5.
blocks, molds, R 1912, p. 11.
construction, R 1906, p. 8; 1909, p. 8.
cylinders for soil and fertilizer studies, R 1912, p. 18; 1915, p. 34.
use in tree surgery, B 33, p. 29.
- Cemostoma coffeella.** (*See Leucoptera coffeella.*)
- Centipedes—**
attacked by toad, R 1926, p. 6.
attacking changa, B 23, p. 16.
- Centrosema—**
plumieri as cover crop, R 1904, p. 394; 1921, p. 22.
pubescens. (*See Conchita peluda.*)
- Century plant—**
as source of honey, B 15, p. 13.
Cuban, R 1903, p. 436; 1905, p. 22.
culture, R 1903, p. 436; 1904, p. 395; 1905, pp. 17, 22.
notes, R 1901, p. 411; 1906, p. 15.
- Cephaelurus virescens—**
on breadfruit, R 1925, p. 36.
on citrus, R 1925, p. 36.
- Cephalobus**, B 13, p. 15.
- Cephalosporium sp.** on coffee, B 17, p. 27.
- Ceratonia siliqua**, B 15, p. 13; R 1903, p. 438.
- Cercarie in snails**, R 1928, p. 36.
- Cercospora—**
beticola on beans, R 1903, p. 449.
beticola on beets, R 1917, p. 29; 1925, p. 36.
beticola on chard, R 1925, p. 39.
capsici on peppers, R 1925, p. 38.
carbonacea on yams, R 1925, p. 40.
citrullina on watermelons, B 7, p. 58.
coffeicola on coffee, B 17, p. 21; R 1913, p. 29; 1925, p. 37.
cruenta on beans, R 1917, p. 29.
hibisci on okra, R 1917, p. 29; 1925, p. 38.
instabilis on pigeon pea, R 1925, p. 39.
lactucae on lettuce, R 1925, p. 38.
nicotianae on tobacco, R 1925, p. 39.
personata on peanuts, R 1903, p. 449; 1917, p. 29; 1925, p. 38.
rosicola on roses, R 1925, p. 39.
sp., on cantaloupe, R 1925, p. 36.
sp., on cassava, R 1925, p. 36.
sp., on chayote, B 7, p. 32.
sp., on hedionda, R 1903, p. 449.
sp., on sweetpotatoes, R 1925, p. 39.
sp., studies, R 1924, p. 29.
spp. on beans, B 7, p. 24; R 1925, p. 36.
vaginae on cane, R 1925, p. 36.
- Cereals—**
diseases, R 1917, p. 30.
lime-magnesia ratio, C 10, p. 3.
silica as nutrient, R 1909, p. 18.
(*See also specific kinds.*)
- Cerezas tree**, R 1903, p. 441.
- Cerezo tree.** (*See Barbados cherry.*)
- Cereus triangularis**, R 1904, p. 393.
- Ceriman**, R 1904, p. 406; 1905, p. 39.
- Ceroplastes floridensis.** (*See Wax scale.*)
- Cerotoma—**
denticornis on beans, R 1903, p. 448.
ruficornis, R 1926, p. 6.
trifurcata on beans, R 1912, p. 34.
- Cerops**, B 3, p. 12.
- Cestodes in domestic animals**, R 1925, p. 23; 1927, pp. 27, 28.
- Chabertia ovina** in goats, R 1927, p. 28.
- Chaff scale—**
life history, B 10, p. 14.
on citrus, B 10, p. 14; R 1903, p. 445; 1905, p. 27; 1908, p. 24; 1920, p. 23.

- Chaffy scale. (*See* West Indian peach scale.)
- Chalcidid parasitic on coffee leaf miner, R 1904, p. 397.
- Chalecis*—
annulata on cotton, R 1905, p. 23.
ovata, R 1914, p. 34.
- Chamaecrista diphylla*. (*See* Mani cimarrona.)
- Changa—
crops attacked, B 2, pp. 5, 9; B 5, p. 19; B 9, p. 39; B 23, p. 3; R 1902, p. 343; 1907, p. 34.
enemies, B 2, p. 18; B 23, p. 16.
studies, B 2; B 23; C 17, pp. 5, 9; R 1901, p. 414; 1902, pp. 343-352; 1904, p. 396; 1914, p. 31; 1915, p. 42; 1916, p. 25.
- Chango, B 2, p. 18.
- Charcoal—
burner for corn drying, C 18, p. 22.
mixture for poultry, R 1909, p. 40.
notes, R 1906, p. 16; 1927, p. 2.
use in seed germination, R 1912, p. 30; 1925, p. 20.
- Chard—
culture, B 7, p. 31.
diseases, R 1925, pp. 30, 39.
insect pests, R 1926, p. 8; 1928, p. 10.
- Chayote—
culture, B 7, p. 31; R 1904, p. 394; 1908, p. 20.
diseases, B 7, p. 32; R 1925, p. 30.
marketing, B 7, p. 32.
- Cheese—
importation, R 1901, p. 395; 1924, p. 5; 1927, p. 7.
making, R 1925, p. 2.
notes, B 29, p. 15; R 1901, p. 414; 1909, p. 41; 1925, p. 2.
- Cheesecloth—
frames for plant protection, B 2, p. 12; R 1902, p. 349.
tent for plant propagation, R 1903, p. 430.
- Cheilopsipura hamulosa* in chickens, R. 1927, p. 27.
- Cherimoya, R 1903, p. 441; 1905, p. 35; 1907, p. 23.
- Cherry tree chlorosis in England, B 11, p. 29.
- Chestnut—
ink disease, R 1927, p. 25.
tree introduction, R 1904, p. 393.
tree on calcareous soil, B 16, p. 8.
- Chick pea, R 1907, p. 29.
- Chickens—
breeds, C 19, pp. 4-15.
diseases, R 1907, p. 15; 1910, p. 44; 1912, p. 42.
management, C 19.
notes, R 1901, p. 414; 1905, p. 19; 1906, p. 10.
parasites, R 1927, pp. 27, 28, 29.
See also Poultry.
- Chilean nitrate agency, B 31, p. 15.
- "China" orange. (*See* Oranges, sweet.)
- China—
berry tree as windbreak, R 1907, p. 33.
tree diseases, B 28, p. 7.
- Chinese mustard—
culture, R 1917, p. 35; 1922, p. 2.
(See also Mustard.)
- Chinese—
oak culture, R 1904, p. 395.
wood-oil, constants, R 1927, p. 2.
wood-oil tree culture, R 1904, p. 395; 1905, p. 35.
- Chionaspis citri*. (*See* Chaff scale.)
- Chironomus annomus*, C 14, p. 6.
- Chiva on coffee and guama, R 1914, pp. 31, 34.
- Chlamydomonas in soils, R 1912, p. 13.
- Chloride—
of lime as soil disinfectant, R 1910, p. 17; 1923, p. 15.
of potash. (*See* Potassium chloride.)
- Chlorine, effect on fruits, R 1922, p. 15.
- Chloroform—
as soil disinfectant, C 11, p. 5.
effect on fruit, R 1922, p. 15.
- Chloronaphtholeum for fungus control, B 17, p. 18.
- Chlorophyceæ as affected by carbon bisulfide, C 11, p. 6.
- Chlorosis—
in plants, B 11, p. 29; R 1909, p. 31; 1913, p. 14.
lime-induced, R 1911, p. 22; 1913, p. 15; 1914, p. 15; 1915, p. 14; 1916, p. 13; 1917, p. 10.
(See also Pineapples; Rice; Sugarcane.)
- Chrysobalanus icaco*. (*See* Cocoa plum.)
- Chrysocharis livida*—
life history, R 1904, p. 397.
parasitic on coffee leaf miner, R 1904, pp. 389, 397; 1905, pp. 22, 46; 1914, p. 33.
- Chrysomphalus aonidum*. (*See* Florida red scale.)
- ficus* on citrus, R 1905, p. 27; 1906, p. 25; 1907, p. 32; 1908, p. 24.
- Chrysopa attacking aphids, R 1903, p. 446.
- Chrysophyllum cainito*. (*See* Star-apple.)
- monoprynum*. (*See* Lechecillo.)
- Cicadella (Tettigonia) sirena*, R 1921, p. 24.
- Cicca disticha*. (*See* Otaheite gooseberry.)
- Cidra. (*See* Citron.)
- Cidrón. (*See* *Lippia nodiflora*.)
- Cieneguillo tree for reforestation, R 1903, p. 438.
- Cigarette beetle fumigation, R 1923, p. 11.
- Ciliata in soils, R 1912, p. 13.
- Cinnamomum*—
camphora. (*See* Camphor tree.)
cassia. (*See* Cinnamon, Chinese.)
zeylanicum. (*See* Cinnamon, commercial.)
- Cinnamon—
Chinese, R 1903, p. 441; 1905, p. 36.
commercial, R 1905, p. 36; 1906, p. 23.
wild, R 1903, p. 438.
- Circular scale. (*See* *Chrysomphalus ficus*.)
- Circlela del pais. (*See* Spanish plum.)
- Cisterns, C 14, p. 9; R 1901, p. 390.
- Citric acid, effect on plants, R 1908, p. 41.
- Citon—
insect pests, R 1912, pp. 34, 35.
notes, R 1903, p. 441; 1904, p. 392; 1905, p. 30.
- Citrus—
as nurse crop, R 1925, p. 3.
as source of honey, B 15, p. 13.
chlorosis in California, B 11, p. 29.
coloring, R 1916, p. 8; 1923, p. 17.
commercial plantings in Porto Rico, B 33, p. 2.
cover crops, R 1919, p. 8.
culture, B 33; R 1901, p. 407; 1902, p. 355; 1903, p. 442; 1904, pp. 392, 400; 1906, pp. 6, 7, 21; 1907, p. 22; 1909, pp. 19, 20; 1910, p. 32; 1911, p. 34; 1913, p. 17; 1917, p. 36; 1918, p. 16; 1919, pp. 7, 24; 1920, pp. 25, 27.
culture outlook, R 1904, p. 400.
diseases, B 33, pp. 14, 23, 27, 28, 30; R 1903, p. 449; 1904, p. 398; 1906, p. 25; 1907, p. 24; 1908, p. 35; 1909, p. 35; 1912, p. 31; 1914, p. 30; 1917, p. 29; 1918, p. 17; 1920, p. 33; 1921, p. 26.
fertilization, B 18; B 33, p. 25; R 1906, p. 22; 1907, p. 24; 1908, p. 18; 1913, p. 16; 1914, p. 18; 1917, p. 23; 1920, p. 27.
fertilizer requirements, C 6, p. 15.
flavor as affected by fertilizer, B 18, p. 30.
fruit, volume-weight determination, B 33, p. 17.
gases affecting, R 1922, p. 15.
growers' meetings, R 1926, p. 27.

- Citrus—Continued.
- growing districts, B 3, p. 48.
 - harvesting and handling, B 33, p. 31.
 - identifying budding stock, B 33, p. 8; R 1928, p. 27.
 - industry, B 10, p. 7; B 33, p. 3; R 1909, p. 11; 1920, pp. 27-37; 1921, p. 26.
 - insect pests, B 2, p. 9; B 10; B 33, pp. 23, 27, 28, 31; R 1903, pp. 445, 446, 456; 1904, pp. 396, 401; 1905, pp. 27, 28; 1907, p. 31, 33, 38; 1908, p. 25; 1909, pp. 24, 28; 1911, p. 34; 1912, p. 36; 1915, p. 44; 1917, p. 6; 1919, pp. 8, 24; 1920, p. 23; 1923, p. 13.
 - introduction into Porto Rico, B 33, pp. 1, 2.
 - "mal di goma," R 1907, p. 24.
 - picking and packing, C 8.
 - propagation, B 33, pp. 14-18.
 - rot in transit, R 1920, p. 33; 1921, p. 26.
 - scab, B 33, p. 27; R 1917, pp. 6, 30; 1918, p. 7; 1919, pp. 7, 22; 1920, p. 24; 1922, p. 13; 1923, p. 13; 1925, p. 36; 1926, p. 2; 1928, p. 32.
 - scarred, B 10, p. 18; R 1911, p. 34.
 - shipping, R 1920, pp. 27-36; 1921, p. 27; 1922, p. 15; 1923, p. 17.
 - soils. (*See Soils.*)
 - tree surgery, B 33, p. 29.
 - water table fluctuations in groves, B 33, p. 5.
 - wind effects. (*See Winds.*)
 - windbreaks. (*See Windbreaks.*)
 - (*See also specific kinds.*)
- Citrus*—
- aurantium amara*. (*See Oranges, sour.*)
 - aurantium amara dulcis*. (*See Oranges, bittersweet.*)
 - aurantium bergamia*. (*See Oranges, Bergamot.*)
 - aurantium sinensis*. (*See Oranges, sweet.*)
 - decumana*. (*See Grapefruit.*)
 - japonica*. (*See Kumquat.*)
 - medica acida*, R. 1903, p. 441.
 - medica genuina*. (*See Citron; Lemon, rough.*)
 - medica limetta*. (*See Limes, sweet.*)
 - medica limon*, R 1903, p. 441.
 - medica lumina*. (*See Lemon, sweet.*)
 - nobilis*. (*See Oranges, Mandarin.*)
 - trifoliata*, R 1904, p. 392; 1908, p. 19; 1909, p. 20.
- Cladosporium*—
- citri*, C 17, p. 28; R 1903, p. 449; 1904, p. 398.
 - (*See also Citrus scab.*)
 - fulvum* on tomatoes, R 1917, p. 29; 1925, p. 39.
 - sp., on oranges, R 1903, p. 456.
 - sp., on tomatoes, R 1919, p. 25; 1921, p. 20.
- Cladothrix odorifera*. (*See Actinomyces odorifera.*)
- Clay—
- effect on seed germination, R 1925, p. 20.
 - composition, B 13, p. 5.
 - use in curing cacao. (*See Cacao curing.*)
 - use in cylinder making, R 1925, p. 7.
- Clérigo attacking changa, B 23, p. 18.
- Climate—
- effect on health, R 1912, p. 17.
 - effect on seed, B 20, p. 5.
 - effect on soils, B 18, p. 5; B 19, p. 9; R 1926, p. 8.
 - of Porto Rico, B 3, p. 11; B 24, p. 5; R 1901, p. 388; 1907, p. 21; 1910, p. 41.
- Clippers for fruit harvesting, C 8, p. 7.
- Clostridium*, C 11, p. 6; C 12, p. 9.
- Clostridium pasteurianum* in sick soils, C 12, p. 11.
- Cloth for shading plants, B 5, p. 19; R 1904, p. 417.
- Clothing, fumigating, C 17, p. 21.
- Clover—
- citric acid effects, R 1908, p. 41.
 - crimson, analyses, B 16, p. 10.
 - crimson, culture at Rio Piedras, R 1902, pp. 337, 341.
 - culture, R 1921, p. 22; 1922, p. 13; 1923, p. 11; 1924, p. 21; 1928, p. 5.
 - fertilizing value, C 6, p. 7.
 - for forage, R 1905, p. 15; 1912, p. 44; 1925, p. 4; 1927, p. 6.
 - red, analyses, B 16, p. 10.
 - red, culture at Rio Piedras, R 1902, pp. 337, 341.
 - sweet, as source of honey, B 15, p. 14.
- Cloves as source of vanillin, B 26, p. 4.
- Cnemidocoptes mutans* in chickens, R 1927, p. 29.
- Coal in Porto Rico, R 1915, p. 9.
- Coal-tar—
- for ant control, R 1903, p. 459.
 - products, insecticidal value, C 17, pp. 17, 20.
 - (*See also specific kinds.*)
- Coca tree culture, R 1903, p. 441; 1905, p. 38.
- Cocaine plant. (*See Coca tree.*)
- Coccidia in dogs, R 1925, p. 23.
- Coccinellid larvæ, R 1903, p. 444.
- Coccoloba*—
- nivea*. (*See Calambreña.*)
 - uvifera*. (*See Seagrape tree.*)
- Coccus* sp.—
- notes, R 1915, p. 42.
 - on guama, R 1914, p. 34.
- Coccyzus minor nesiotes*. (*See Pajaro bobo.*)
- Cockroaches—
- control, C 17, p. 7; R 1926, p. 5.
 - in apiaries, C 13, p. 29.
 - in stored fruit, R 1923, p. 14.
 - notes, R 1902, p. 346.
- Coco de agua, R 1901, p. 410.
- Cocoa—
- plum culture, R 1903, p. 441; 1905, p. 36.
 - plum, insect pests, R 1916, p. 28.
 - production per acre, R 1903, p. 440.
 - (*See also Cacao.*)
- Cocoos, B 6, p. 8.
- Coconut—
- as source of honey, C 13, p. 28; B 15, p. 12; R 1908, p. 28.
 - bud rot, R 1910, p. 36; 1911, p. 37; 1924, p. 26; 1925, p. 24; 1926, p. 2, 28.
 - (*See also Phytophoras, tropical.*)
 - diseases, R 1905, p. 37; 1912, p. 32; 1924, p. 26; 1925, p. 24.
 - fiber for seed germination, R 1919, p. 28; 1925, p. 20.
 - fiber for storing and wrapping fruit, B 24, p. 25; R 1923, p. 14.
 - growing districts, B 3, pp. 18, 19, 37, 49; R 1901, p. 410.
 - husks, discarded, C 14, p. 9.
 - palm, injury by lightning, R 1925, p. 25.
 - plantation survey, R 1917, p. 21.
- Coconuts—
- culture, R 1907, p. 25; 1914, p. 19; 1917, p. 21; 1919, p. 9.
 - fertilization, R 1909, p. 21; 1912, p. 25; 1913, p. 19; 1914, p. 19; 1915, p. 25; 1916, p. 18; 1917, p. 21; 1919, p. 21; 1921, p. 12; 1922, p. 8; 1923, p. 6; 1925, p. 13; 1926, p. 21; 1927, p. 13; 1928, p. 20.
 - insect pests, R 1903, pp. 447, 465; 1905, p. 37; 1915, pp. 44, 45; 1917, p. 34.
 - interplanted with legumes, B 19, p. 26; R 1913, p. 9; 1914, p. 19.
 - marketing, B 3, p. 49.

- Coconuts—Continued.**
notes, R 1901, p. 397; 1905, p. 36; 1910, p. 11; 1918, p. 22.
Cocos nucifera. (See *Coconut*.)
Cocuisea. (See *Century plant, Cuban*.)
- Coffea—**
- abeokutæ*, B 30, p. 20.
 - arabica*, B 30, p. 8.
 - arabica typica*, B 30, p. 8.
 - canephora*, B 30, p. 22.
 - congensis* hybrids, B 30, p. 24.
 - congensis* var. *chalotii*, B 30, p. 24.
 - decevrai*, B 30, p. 19.
 - dybowskii*, B 30, p. 20.
 - erecta*, B 30, p. 8.
 - excelsa*, B 30, p. 17; R 1928, p. 17.
 - laurentii*, B 30, pp. 21, 23.
 - laurina*, B 30, p. 8.
 - liberica*, B 30, p. 15.
 - macrocarpa*, R 1911, p. 28.
 - maragogype*, B 30, p. 11; R 1910, p. 40.
 - mauritiana*, R 1911, p. 28.
 - mokka*, B 30, p. 13.
 - perrieri*, R 1914, p. 28.
 - quillou*, B 30, pp. 21, 23.
 - robusta*, B 30, p. 21.
 - stenophylla*, R 1904, p. 394.
 - ugandæ* hybrid, B 30, pp. 21, 24.
 - zanguebariae*, R 1911, p. 28.
- Coffee—**
- analysis, C 15, p. 21.
 - as nurse crop, R 1925, p. 3.
 - as source of honey, C 13, p. 27; B 15, p. 13; R 1908, p. 27; 1911, p. 32.
 - branches, dimorphism, B 32, p. 1.
 - caffein in, B 30, p. 6.
 - cherry, size and weight, B 30; R 1914, p. 23.
 - cherry, viability, R 1911, pp. 28, 29.
 - culture in Porto Rico, C 5; C 15; B 1, p. 11; B 3, p. 44; B 21; B 22; B 30; R 1901, pp. 398, 400; 1902, p. 334; 1903, pp. 450-453; 1904, pp. 394, 406-410; 1905, pp. 8, 42; 1906, p. 29; 1907, p. 39; 1908, p. 33; 1909, pp. 10, 22, 32; 1910, p. 37; 1911, p. 28; 1912, p. 28; 1913, p. 22; 1914, p. 23; 1915, p. 30; 1916, p. 21; 1917, p. 24; 1918, p. 11; 1919, pp. 9, 19; 1920, p. 16; 1921, p. 12; 1922, p. 8; 1924, p. 15; 1926, p. 19; 1927, p. 12.
 - culture in Venezuela, R 1913, p. 24.
 - diseases, C 11, p. 11; B 17; R 1903, pp. 449, 461, 462; 1904, pp. 398, 399; 1905, p. 47; 1906, p. 32; 1909, pp. 33, 35; 1910, pp. 33, 37; 1911, p. 37; 1912, pp. 31, 32; 1913, p. 29; 1914, p. 28; 1917, p. 24; 1925, p. 37.
 - (See also *Stilbella flavida*.)
 - fermentation, R 1907, p. 52.
 - fertilization, C 15, p. 21; B 31; R 1906, pp. 11, 30; 1913, p. 22; 1914, p. 24; 1915, pp. 30, 31; 1917, p. 25; 1918, p. 11; 1921, p. 12; 1922, p. 8; 1923, p. 7; 1924, p. 15; 1925, p. 11; 1926, p. 19; 1927, p. 12; 1928, p. 16.
 - "granos vanos" berries, B 17, p. 25.
 - growing districts, B 3, pp. 25, 28, 30, 33, 40.
 - industry, C 2; B 3, pp. 10, 44, 52; B 30, p. 1; R 1901, pp. 394, 396, 397; 1905, p. 42; 1906, p. 6; 1907, p. 10; 1911, p. 11; 1912, p. 28; 1913, p. 8; 1916, p. 6; 1920, p. 11; 1928, p. 17.
 - insect pests, B 2, p. 9; B 30, p. 16; R 1903, pp. 444, 447, 462, 463; 1904, pp. 396, 399; 1905, p. 46; 1906, pp. 28, 31; 1907, pp. 38, 40; 1908, pp. 27, 33; 1909, pp. 28, 33; 1910, pp. 32, 37; 1911, p. 30; 1912, pp. 29, 34, 35, 36; 1913, p. 23; 1914, pp. 31, 34; 1915, pp. 42, 44; 1928, p. 17.
 - (See also *Leucoptera (Cemiostoma) coffeeella*.)
- Coffee—Continued.**
- interplantings, B 3, p. 47; B 13, p. 17; R 1910, p. 40; 1912, p. 23; 1913, p. 24; 1922, p. 8.
 - malting, R 1906, p. 30.
 - market, American and European, B 3, pp. 10, 45; R 1901, pp. 397, 402; 1905, p. 42; 1906, pp. 12, 29; 1907, pp. 10, 11; 1908, p. 13; 1909, pp. 7, 9; 1910, pp. 8, 37; 1915, p. 7; 1918, p. 7.
 - notes, R 1903, p. 460; 1912, p. 9; 1919, p. 5; 1923, p. 1; 1925, pp. 1, 4; 1926, p. 2; 1927, p. 1.
 - parasitic plants, R 1903, p. 448.
 - preparation for market, B 3, p. 45; B 30, p. 5.
 - photoperiodism, R 1927, p. 12.
 - pulp analysis, R 1907, p. 53.
 - pulp and molasses for hogs, R 1907, p. 53.
 - rats affecting, R 1914, p. 24.
 - seed germination, R 1911, pp. 28, 29; 1912, p. 29.
 - shade pests, R 1911, p. 30; 1912, p. 29; 1913, p. 23; 1914, p. 33.
 - shade plants and trees, C 5, p. 12; C 15, p. 23; R 1901, pp. 398, 399, 409; 1910, p. 40; 1911, pp. 36, 33; 1913, pp. 23, 24; 1916, p. 22; 1919, p. 20; 1926, p. 20.
 - soils, productive and unproductive, B 21; C 5, p. 6; C 15, p. 8; R 1901, p. 399.
 - soils, sick, B 13, p. 14; C 11, p. 11; C 12, pp. 9-18; R 1909, p. 15.
 - storms affecting. (See *Storms*.)
 - substitutes, R 1905, p. 22.
 - sunlight effects. (See *Sun*.)
 - topping, B 32; R 1928, pp. 16, 17.
 - transplanting, B 22.
 - varieties, description, B 30.
 - wind effects. (See *Winds*.)
 - windbreaks. (See *Windbreaks*.)
 - Coirtres, diseases, B 17, p. 13.
 - Coix lachryma-jobi*. (See *Job's tears*.)
 - Cojoba tree for reforestation, R 1903, p. 438; 1914, p. 9; 1923, p. 2.
 - Cojóbana. (See *Saman*.)
 - Cola acuminata*. (See *Cola tree*.)
 - Cola tree, R 1903, p. 441.
 - Coleosporium ipomæae*, R 1903, p. 449.
 - Coleus* spp., B 23, p. 8; R 1926, p. 10.
 - Collards—**
 - culture, B 7, p. 33; R 1920, p. 21.
 - notes, R 1926, p. 8.
 - worms, B 7, p. 33. - Colletotrichum—**
 - agaves* on sisal, R 1925, p. 39.
 - cajani* on pigeon pea, R 1925, pp. 31, 38; 1926, p. 30.
 - circinans* on onions, R 1925, p. 38.
 - coffeanum* on coffee, R 1905, p. 47.
 - cradwickii*, R 1913, p. 27.
 - glecosporioides*—
 - on avocado, R 1925, p. 34.
 - on citrus, R 1917, p. 29; 1925, p. 36; 1927, p. 26.
 - on grapefruit, R 1905, p. 29.
 - on mangoes, R 1925, p. 38.
 - on rough lemon, R 1905, p. 23.
 - lagenarium* on watermelons, R 1925, p. 40.
 - lindemuthianum* on beans, R 1925, pp. 31, 36.
 - nigrum* on peppers, R 1925, p. 38.
 - spp., on cacao, R 1913, p. 27.
 - spp., C 17, p. 24. - Colloidal matter in soils. (See *Soils*.)
 - Coldocasia antiquorum esculentum*. (See *Taro*.)
 - Color of shade, effect on lettuce and tobacco, B 5, p. 19; R 1904, p. 417.
 - Colorimetric method of determining iron in plant ashes, R 1914, p. 13.
 - Coloring fruit artificially. (See *Fruit coloring*.)

Colpidium colpoda in soils, B 13, p. 20; R 1912, p. 13.
Colpoda cucullus, B 13, pp. 12, 14, 16; R 1912, p. 13.
Colubrina ferruginea for reforestation, R 1903, p. 438.
Comején colonies. (See Ants, white.)
Commeliná spp. (See Coitres.)
Conchaspis angraeci on vanilla, R 1917, p. 34.
Conchita peluda as cover crop, B 19, p. 24.
 Concrete construction. (See Cement.)
Congos. (See Plantain.)
 Containers for seed preservation, B 20, p. 26.
 Coolie labor system, R 1903, p. 439.
 Cooperation, miscellaneous, B 1, p. 12; R 1906, p. 16; 1907, p. 24; 1908, p. 18; 1909, p. 14; 1910, p. 12; 1915, p. 12; 1917, p. 7; 1920, p. 37.
 Cooperative fruit exchange. (See Fruit exchange.)
Cooperia spp., in cattle, R 1925, p. 23; 1927, p. 27.
Copaifera hymenaeifolia. (See Cojoba tree.)
 Copal tree for reforestation, R 1903, pp. 437, 438.
 Copper—
 carbonate mixture as fungicide, C 17, p. 27.
 sulphate—
 effect on seed germination, R 1905, p. 33.
 for sorehead in chickens, R 1912, p. 42.
 fungicidal value, C 17, p. 27; R 1923, p. 15.
 Coral—
 deposit. (See "Tosca.")
 sand. (See Soils, sand.)
 Corazon. (See Custard apple.)
 Corcho prieto for reforestation, R 1903, p. 438.
 Corchorus—
 capsularis. (See Jute, true.)
 hirsutus, as source of honey, B 15, p. 13.
 Cordage from native plants, R 1904, p. 395.
Cordia nitida. (See Cerezas tree.)
 Coreopsis, R 1926, p. 10.
 Cork, ground, for packing fruit, R 1919, p. 17.
 Corn—
 acreage, R 1919, p. 31.
 as a feed, C 19, p. 21; B 29, pp. 11, 12; R 1909, p. 42; 1910, p. 44; 1912, p. 43; 1928, p. 5.
 as windbreak, B 33, p. 21.
 breeding, R 1913, p. 33; 1919, pp. 26, 30; 1920, p. 22; 1921, p. 14; 1922, p. 9; 1923, p. 7.
 carbon bisulphide effects, C 11, p. 8.
 citric acid effect, R 1908, p. 41.
 dent, C 18, p. 5; R 1902, pp. 337, 341.
 diseases, R 1925, p. 37; 1917, p. 30.
 drying, C 18, p. 22.
 ear-to-row planting, C 18, p. 20.
 fertilization, B 25, p. 21.
 field, R 1901, p. 412; 1902, pp. 337, 341; 1903, pp. 421, 424; 1914, p. 25; 1917, p. 35; 1919, p. 36; 1921, p. 18; 1922, p. 11; 1924, p. 21; 1925, p. 15; 1926, p. 22; 1927, p. 14; 1928, p. 20.
 flint, characteristics, C 18, p. 5.
 for seed, C 18; R 1919, p. 34.
 germination, C 18, p. 16.
 growing districts, B 3, pp. 19, 23, 28.
 hybrids, description, R 1927, p. 18.
 insect pests, R 1902, p. 338; 1903, p. 443; 1905, p. 13; 1912, p. 34; 1917, p. 33; 1921, p. 23; 1923, p. 13.
 kafir. (See Kafir corn.)
 kernel structure, C 18, p. 4.
 lime-magnesia ratio, C 10, p. 3.
 notes, R 1901, p. 397; 1903, pp. 421, 424; 1905, p. 13; 1908, p. 20; 1915, p. 11; 1917, pp. 5, 7; 1918, pp. 21,

Corn—Continued.
 23; 1919, p. 10; 1926, p. 2; 1927, p. 6.
 on acid soil, B 13, p. 8.
 photoperiodism, R 1927, p. 12.
 silage, B 29, p. 12; R 1909, p. 42; 1911, p. 43; 1924, pp. 5, 6.
 score cards, C 18, pp. 11, 19.
 soft, C 18, p. 5.
 species, C 18, p. 4.
 sweet, culture, R 1902, p. 338; 1921, p. 18; 1922, p. 11; 1923, p. 11; 1924, p. 23; 1925, p. 16; 1927, p. 15; 1928, p. 22.
 sweet, growth in Tropics, R 1928, p. 10.
 sweet, notes, C 18, p. 5; R 1902, p. 337; 1905, p. 16.
 Corn meal—
 and phosphorus for crab control, C 17, p. 29.
 as stock feed, B 29, p. 12.
 feeding value and cost, R 1909, p. 42.
 for poultry, R 1913, p. 34.
 Cornstarch in soluble sulphur dust, R 1917, p. 30.
 Corozo palm as source of honey, B 15, p. 15.
 Corpuscles, red, as affected by Tropics, R 1912, p. 17.
 Corrosive sublimate—
 effect on seed, C 17, p. 26.
 for pruning tools, C 17, p. 26.
 fungicidal value, C 17, p. 26.
 insecticidal value, C 17, p. 18; R 1903, p. 446.
 Corticium—
 koleroga on coffee, R 1925, p. 37.
 koleroga on *Glipticidias*, R. 1925, p. 37.
 lilacino-fuscum, R 1914, p. 29.
 sp., on cacao and coffee, R 1914, p. 29.
 sp., on grapefruit, R 1914, p. 29.
 Corynosoma sp. in the cat, R 1927, p. 27.
 Corypha—
 sp., culture, R 1917, p. 24.
 umbraculifera. (See Talipot palm.)
 Corythaica monacha on eggplant, R 1915, p. 43.
 Cosmos, photoperiodism, R 1924, p. 11.
 Cotton—
 as source of honey, B 15, p. 14.
 culture, C 3; R 1901, p. 411; 1902, pp. 337, 341; 1903, p. 425; 1904, p. 386; 1905, p. 11; 1906, p. 13; 1907, p. 12; 1908, p. 13; 1909, p. 11; 1910, p. 12; 1912, p. 11.
 diseases, R 1903, p. 465; 1925, pp. 28, 29, 37.
 fabrics, importation, R 1901, p. 395.
 fertilizer requirements, C 6, p. 14; R 1905, p. 12.
 insect pests, C 3, p. 4; R 1904, p. 396; 1905, pp. 11, 23; 1906, p. 13; 1909, p. 12; 1923, p. 13.
 picking in Porto Rico, C 3, p. 3.
 picking in United States, C 3, p. 2.
 Rhizoctonia ferrugena on. (See *Rhizoctonia ferrugena*.)
 spraying, R 1923, p. 13.
 Cottonseed—
 meal as cattle feed, B 29, p. 12.
 meal as fertilizer, C 12, p. 7; R 1907, p. 38; 1924, p. 25.
 meal, feeding value and cost, R 1909, p. 42.
 oil mixture, insecticidal value, C 17, p. 20.
 Coturniculus savannarum intricatus. (See Gorrión.)
 Couroupita guianensis. (See Cannon-ball tree.)
 Cover crop culture, C 15, p. 20; B 19; R 1908, p. 19; 1909, p. 19; 1910, p. 26; 1911, p. 25; 1913, p. 18; 1914, p. 20; 1919, p. 8; 1920, p. 25; 1921, p. 10; 1922, p. 5; 1923, p. 5.
 Cowitch. (See Pica pica.)

- Cowpeas—**
 acreage, R 1918, p. 21; 1919, p. 32.
 as cattle feed, B 29, p. 11; R 1928,
 p. 5.
 as cover crop, C 5, p. 4; B 19, p. 11;
 R 1907, p. 9; 1910, p. 26; 1911,
 p. 25; 1914, p. 9; 1915, p. 29.
 as forage crop, R 1905, p. 15; 1906,
 p. 14; 1907, p. 12; 1908, p. 14;
 1911, p. 44; 1912, p. 44; 1927, p. 6.
 culture, R 1902, p. 337; 1903, pp.
 421, 423; 1907, p. 29; 1908, p. 21;
 1912, p. 8; 1917, p. 5; 1919, p. 36;
 1920, p. 37; 1921, p. 15; 1922,
 p. 9; 1923, pp. 1, 8.
 diseases, R 1903, p. 467.
 insect pests, R 1902, p. 342; 1903,
 p. 423.
- Coxcomb,** R 1926, p. 10.
- Crab-nut tree.** (See Carap tree.)
- Crabs, land,** C 17, pp. 21, 29.
- Crassissoma urosobulatum** in swine, R 1925,
 p. 22; 1927, p. 27.
- Crates** for fruit, C 8, p. 7; B 8, p. 29; R
 1906, pp. 19, 20.
- Cream,** B 29, p. 4.
- Creolin—**
 as soil disinfectant, C 11, p. 12.
 insecticidal value, C 17, p. 17; R 1902,
 p. 350; 1903, p. 446.
- Creosote,** insecticidal value, C 17, p. 17;
 R 1902, p. 350.
- Crescentia cujete.** (See Calabash.)
- Cresol** for rodents, C 11, p. 10.
- Cress culture,** B 7, p. 33.
- Crops.** (See specific kinds.)
- Crotalaria—**
anagyroides, R 1925, p. 13.
incana, R 1923, p. 5.
junccea. (See Sunn hemp.)
retusa. (See Matraca.)
retzii, R 1925, p. 13.
sagittalis, R 1923, p. 5.
saltitana, R 1917, p. 23; 1925, p. 13.
sericea, R 1923, p. 5.
striata as shade for coffee, R 1926, p.
 20.
usaramensis, R 1923, p. 5.
- Crotalariae—**
 as forage crop, R 1921, p. 3.
 culture, R 1921, p. 10; 1923, p. 5;
 1924, p. 11; 1925, p. 13.
 for reforestation, R 1919, p. 11; 1924,
 p. 7.
 with cane, R 1923, p. 1.
 with citrus, R 1919, p. 8.
 with pineapples, R 1925, p. 9.
- Croton** diseases, B 17, p. 9.
- Crotophaga ani.** (See Blackbirds.)
- Cruciferæ—**
 on acid soil, B 13, p. 8.
 on calcareous soil, B 16, p. 10.
- Cruciferous plants,** citric acid effects, R
 1908, p. 41.
- Cryptomelemus montrouzieri**, R 1912, p. 37.
- Cryptomeigenia** sp., R 1912, p. 35.
- Cuban agriculture,** R 1910, p. 33.
- Cuban ti-es tree.** R 1903, p. 441; 1908, p.
 19; 1909, p. 22.
- Cucumber—**
 beetle, striped—
 notes, R 1907, p. 36; 1912, p. 34;
 1914, p. 31; 1923, p. 13.
 on cucumbers, B 7, p. 35.
 on soybeans, R 1923, p. 14.
 on squash, B 7, p. 51.
 on watermelons, B 7, p. 58; R
 1923, p. 14.
 culture, B 7, p. 33.
 diseases, B 7, p. 35; R 1902, p. 339;
 1920, p. 22; 1925, p. 37.
 insect pests, B 7, p. 35; R 1902, p.
 339; 1903, p. 448; 1918, p. 17; 1920,
 p. 22.
 marketing, B 7, p. 34.
 notes, R 1902, p. 337; 1903, p. 424;
 1907, p. 29; 1908, p. 21; 1922, p. 2.
- Cucumber—Continued.**
 pickling, B 7, p. 35.
Rhizoctonia ferrugena on. (See *Rhi-*
zoctonia ferrugena.)
- Cucumis anguria**, diseases, B 17, p. 9.
- Cuerda,** square feet in, B 7, p. 15.
- Cuji tree.** (See *Cesalpinia coriaria*.)
- Culex—**
bisulcatus, C 14, p. 6.
cubensis, R 1907, p. 38.
pipiens. (See Mosquitoes, house-fre-
 quenting of North.)
quinquefasciatus. (See Mosquitoes,
 house-frequenting of Tropics.)
salinarius, R 1907, p. 38.
similis, C 14, p. 6.
towleri, C 14, p. 6.
- Cultivation—**
 clean, for insect control, B 2, p. 13;
 B 23, p. 21; R 1902, p. 349.
 effect on soil, B 14, p. 7.
- Cupania—**
americana. (See Guara.)
sapidu. (See Akee.)
- Curculionidæ—**
 on coffee, R 1903, p. 463.
 on oranges, R 1903, p. 459.
- Curcuma longa.** (See Turmeric.)
- Cuscuta americana**, R 1903, p. 448.
- Custard apple,** R 1903, p. 441; 1905, p. 35.
- Custard apple, wild,** R 1903, p. 441.
- Cutter** for cattle feed, R 1926, p. 4.
- Cutworm control,** C 17, pp. 5, 9.
- Cutworms—**
 on coffee, R 1903, p. 443.
 on cotton, R 1923, p. 13.
 on tobacco, R 1907, p. 34.
- Cyanamide—**
 fertilizing value, R 1908, p. 31.
 for white grubs, R 1917, p. 34.
- Cyanophyceæ**, C 11, p. 6.
- Cyclones.** (See Storms.)
- Cylinders—**
 for plant protection. (See Wire
 frames.)
 in soil moisture studies, R 1925, p. 7.
- Cynodon dactylon.** (See Bermuda grass.)
- Cyphomandra betacea.** (See Tree tomato.)
- Cytospadix** spp., B 6, p. 18.
- Cysticercus cellulosæ** in swine, R 1927, p.
 28; 1928, p. 36.
- Cysticercus tenuicollis** in goats and swine,
 R 1927, p. 28.
- Cytisus laburnum.** (See Bean tree.)
- Dacryodes hexandra.** (See Tabonuco
 trees.)
- Dactylis glomerata.** (See Orchard grass.)
- Dactylopius—**
citri on citrus, R 1903, p. 445.
 sp. on pajuru seedlings, R 1903, p. 446.
 sp. on yams, R 1903, p. 447.
- Dahlbergia sissoo** for reforestation, R 1903,
 p. 438.
- Dahlias—**
 insect pests, R 1923, p. 14.
 notes, R 1905, p. 18; 1925, p. 10;
 1926, p. 10.
- Dairy—**
 products, importation, R 1920, p. 9.
 utensils, B 29, p. 14.
- Dairying** in Porto Rico, B 29; R 1901, p.
 413; 1903, p. 429; 1909, p. 40; 1911,
 p. 43; 1912, p. 41; 1921, p. 3; 1925,
 p. 2.
- Dandelion culture,** B 7, p. 36.
- Daphnopsis philippiana**, R 1903, p. 437.
- Dasheen—**
 culture, R 1904, p. 393; 1911, p. 26;
 1912, p. 26; 1914, p. 17; 1924, p.
 15; 1925, p. 13; 1927, p. 14; 1928,
 p. 19.
 photoperiodism, R 1928, p. 18.
 shipping, R 1928, p. 19.
- Date palm disease,** R 1903, p. 449.
- Davainea tetragona** in chickens, R 1927,
 p. 27.

- Declieux, M., pioneer in coffee culture, B 3, p. 10.
- Deer flies, R 1925, p. 23.
- Delphax saccharivora* on cane, B 15, p. 15. (See also West Indian cane fly.)
- Dematophora*, B 17, p. 17.
- Demodex folliculorum* in cattle, R 1927, pp. 28, 29.
- Dendrobium maccarthiae*, R 1925, p. 29.
- Dendroica petechia bartholemica*. (See Canario de manglar.)
- Dengue fever, C 20, p. 3.
- Denitrification process, B 13, p. 12.
- Dermacentor nitens* in horses and swine, R 1927, p. 28.
- Dermanyssus gallinæ* in chickens, R 1927, p. 29.
- Dermatophilus penetrans* in swine, R 1927, p. 28.
- Desmodium*—
 adscendens. (See Zarzabacoa galana.)
 incanum. (See Zarzabacoa común.)
- Diabrotica*—
 bivittata. (See Cucumber beetle, striped.)
 graminea on weeds, R 1912, p. 34.
 innuba. (See Cucumber beetle, striped.)
 sp., R 1926, p. 6.
 vittata. (See Cucumber beetle, striped.)
- Diamond-backed cabbage moth, R 1903, p. 448; 1907, p. 35; 1914, p. 31.
- Diaphania*—
 hyalinata on melons and squash, R 1903, p. 448.
 nitidalis on cucumbers, B 7, p. 35.
- Diaprepes spengleri*—
 life history, B 10, p. 8; R 1914, p. 35.
 on oranges, R 1906, p. 26; 1907, p. 31; 1908, p. 25.
- Diaspis pentagona*. (See West Indian peach scale.)
- Diastase of pineapple leaves, R 1927, p. 23.
- Dictyocaulus* sp. in cattle, R 1927, p. 27.
- Didymopanax morototoni*. (See Yagrumo macho.)
- Diatraea saccharalis* on cane, R 1905, p. 10; 1906, p. 28; 1919, p. 22; 1924, p. 3.
- Diffugia constricta* in soils, R 1912, p. 13.
- Dioscorea*—
 aculeata, B 27, p. 15.
 alata, B 27, p. 19.
 bulbifera, R 1903, p. 433.
 cayennensis, B 27, p. 20.
 pentaphylla, R 1904, p. 394.
 chondrocarpa, B 27, p. 18.
 divaricata, R 1903, p. 433.
 sativa, B 27, p. 17.
 trifida, R 1903, p. 433.
 (See also Yams.)
- Diospyros*—
 discolor. (See Mabolo tree.)
 kaki. (See Persimmons, Japanese.)
- Dipelia* sp. for reforestation, R 1903, p. 438.
- Diphyllothorium mansoni* in cats, R 1927, p. 27.
- Diplodia*—
 cacaoicola on cacao in Grenada, R 1903, p. 466.
 gossypina on cotton, R 1925, p. 37.
 natalensis on citrus, B 33, p. 30; R 1914, p. 30; 1921, p. 27.
 tubericola on sweetpotatoes, R 1925, p. 39.
- Dipping tanks, B 29, p. 9; R 1918, p. 21; 1920, p. 8; 1921, pp. 7, 25.
- Dipsacaceæ in calcareous soil, B 16, p. 10.
- Diptera, attacked by toad, R 1926, p. 6.
- Dipylium* sp. in dogs, R 1927, p. 27.
- Disphragas spiralis* in guinea hens, R 1927, p. 27.
- Divi-divi. (See *Cesalpinia coriaria*.)
- Dodder on alfalfa. (See *Cuscuta americana*.)
- Dogs, parasites, R 1925, p. 23; 1927, p. 27.
- Dolichos lablab*—
 as cover crop, B 19, p. 27; R 1910, p. 26.
 notes, R 1912, p. 8; 1920, p. 19.
- Dolomite, C 10, p. 4.
- Downy myrtle, R 1905, p. 40; 1908, p. 19.
- Doyvalis [Aberia] caffra*. (See Kei apple.)
- Dracænas insect pests, R 1923, p. 14.
- Dracontium asperum*, B 6, p. 18; R 1903, p. 432.
- Dragonflies, R 1905, p. 23.
- Drainage—
 at station, R 1928, p. 1.
 for cane, B 9, p. 12; R 1901, p. 403.
 for coffee, C 15, pp. 12, 14.
 for Porto Rico, B 3, p. 41; B 9, p. 12; R 1906, p. 8.
 for tobacco, B 5, p. 15.
 use of bamboo for, R 1903, p. 420.
- Drake's attack on San Juan, B 3, p. 8.
- Dried blood for pineapple soils, R 1924, p. 25.
- Driers for fruit, C 8, p. 11.
- Drymæus liliaceus*, R 1926, p. 6.
- Drypetes glauca*. (See Palo blanco.)
- Ducks—
 notes, R 1905, p. 19; 1906, p. 10; 1909, p. 39.
 parasites, R 1926, p. 30; 1927, p. 27.
- Dusting—
 for citrus scab, R 1917, p. 30.
 machinery for insect control, C 17, p. 4.
- Dyes from turmeric, R 1905, p. 37.
- Dynamite, use in loosening soils, R 1913, p. 20.
- Dysdercus suturrellus* on cotton, R 1904, p. 396; 1905, p. 11.
- Earle's observations on Porto Rico. (See Porto Rico.)
- Earth—
 rammed. (See Rammed)
 tamped, for flooring, B 29, p. 14.
- Earwigs, R 1902, p. 346.
- East India sugar palm as ornamental, R 1917, p. 24.
- Echidnophaga gallinacea*. (See Sticktight fleas.)
- Echinochloa polystachya*. (See Cayenne grass.)
- Ecpanthelia eridanus* on oranges, R 1914, p. 34.
- Eddoes, B 6, p. 8.
- Edema in Porto Rico, R 1912, p. 17.
- Eggplant—
 culture, B 7, pp. 36, 37; R 1904, p. 403; 1907, pp. 22, 29; 1908, p. 20; 1920, p. 21; 1922, p. 10; 1923, p. 8.
 diseases, B 7, p. 37; R 1923, p. 8; 1925, pp. 29, 37.
 insect pests, B 2, p. 9; B 7, p. 38; R 1915, pp. 42, 43, 45; 1923, p. 14.
 marketing, B 7, p. 37.
 notes, R 1903, p. 424; 1922, p. 2; 1926, p. 9.
 wild, B 7, p. 37; R 1907, p. 22; 1908, p. 20; 1915, p. 43; 1923, p. 8.
- Eggs—
 hatchability of imported, C 19, p. 17.
 keeping qualities of nonfertilized, C 19, p. 19.
 market value, R 1901, p. 414; 1909, p. 40.
 marketing in San Juan, C 19, p. 3.
 notes, R 1923, p. 2.
- Eimeria zürni* in cattle, R 1927, p. 28.
- Elaeis guineensis*. (See Guinea oil palm.)
- Elephant grass. (See Napier grass.)
- Elephantiasis, C 14, p. 22; C 20, p. 3.
- Eleusine indica*. (See Yerba dulce.)
- Emajagua—
 as source of honey and honeydew, B 15, p. 15.
 as windbreak for coffee, R 1909, p. 32; 1910, p. 37.
 notes, R 1901, p. 411.

- Empoasca mali*—
on beans, R 1903, p. 448.
on cowpeas, R 1903, p. 423.
- Empusa grylli*, B 2, p. 17; R 1902, p. 351.
- Empyreuma lichas* on oleanders, R 1915, p. 45.
- Endive, cultural directions, B 7, p. 38.
- Enzymes—
in chlorotic and green pineapple leaves, B 11, p. 39.
in pineapple plant, R 1927, p. 22.
- Epitrix* spp., B 23, p. 3.
- Eragrostis abyssinica*. (See Teff grass.)
- Eremacausis*. (See Manure "dry rotting.")
- Eriobotrya japonica*. (See Loquat.)
- Eriopsis floridensis* on ferns, R 1915, p. 44.
- Erysiphe*—
polygoni on beans, R 1917, p. 28.
spp., on beans, C 17, p. 26.
- Erythrina*—
berteroana. (See Bucare tree.)
corallodendron. (See Bucare tree.)
micropteryx. (See Bucare tree.)
monosperma as source of honey, B 15, p. 15.
sp., for reforestation, R 1927, p. 2.
- Erythroxylum coca*. (See Coca tree.)
- Espino tree for reforestation, R 1903, p. 438.
- Ether—
as soil disinfectant, C 11, p. 5.
effect on fruit, R 1922, p. 15.
- Ethyl alcohol mixture, use in ant control, C 17, p. 18.
- Ethylene effect on fruit, B 33, p. 31; R 1922, p. 15.
- Eucalyptus—
as source of honey, B 15, p. 14.
culture, R 1908, p. 19; 1909, pp. 13, 22; 1910, p. 30; 1911, p. 27; 1912, p. 26; 1914, p. 9; 1918, p. 8; 1919, p. 11; 1924, p. 7.
diseases, R 1911, p. 27; 1912, p. 27.
- Eucalyptus*—
corynocalyx, R 1903, p. 438.
diversicolor, R 1903, p. 438.
globulus, R 1903, p. 438.
paniculata, R 1912, p. 27.
piperita, R 1912, p. 27.
robusta, R 1914, p. 9; 1924, p. 7.
rostrata, R 1912, p. 27.
tereticornis, R 1912, p. 27.
viminalis, R 1903, p. 438.
- Euchlæna mexicana*. (See Teosinte.)
- Eudamus proteus* on beans, R 1912, p. 34.
- Eugenia*—
jambolana. (See Java plum.)
jambos. (See Pomarosa.)
malaccensis. (See Tahiti apple.)
mitchellii. (See Surinam cherry.)
uniflora. (See Surinam cherry.)
- Eugenol. (See Cloves.)
- Eupatorium dalea*, R 1903, p. 441.
- Euphorbia didyma*. (See Litchi.)
- Euplexoptera. (See Earwigs.)
- Euscepes (Cryptorhynchus) batatae* on sweet-potato, R 1914, p. 35.
- Eutermes morio*. (See Ants, white.)
- Excreta, horse, composition, C 15, p. 22.
- Exophthalmus spengleri* on oranges, B 2, p. 9; R 1904, p. 396; 1905, p. 27.
- Experiment station—
appropriations, B 1, pp. 7, 10; R 1901, p. 381; 1902, p. 331; 1903, p. 419; 1904, p. 383; 1906, p. 7; 1907, p. 8; 1908, p. 7; 1909, p. 7.
buildings and improvements, B 1, p. 9; R 1902, p. 332; 1903, p. 420; 1904, p. 383; 1908, p. 7; 1909, p. 8; 1912, pp. 10, 11; 1914, p. 12; 1919, p. 21; 1921, pp. 6, 7; 1928, p. 1.
extension work, R 1919, p. 13; 1921, p. 6.
- La Carmen farm, B 1, p. 9; B 2, p. 10; R 1902, p. 332; 1905, p. 20.
- library, R 1928, p. 1.
- location and establishment, B 1, p. 7; R 1901, pp. 381, 382; 1902, pp. 331, 332; 1928, p. 2.
- Experiment station—Continued.
notes, B 1, pp. 10, 13; R 1903, pp. 420, 427; 1904, pp. 383, 385; 1905, p. 7; 1906, pp. 5-8, 16; 1907, pp. 7, 8; 1908, pp. 8, 9; 1909, pp. 8, 14; 1910, pp. 12, 13, 14; 1911, p. 14; 1912, pp. 7-9, 11; 1917, p. 5; 1920, p. 12; 1921, p. 2; 1923, p. 1; 1924, p. 1; 1926, p. 1; 1928, p. 1.
staff changes, R 1903, p. 419; 1904, p. 383; 1905, p. 20; 1906, p. 8, 25; 1907, p. 8; 1912, p. 34; 1917, p. 35; 1918, p. 5; 1921, p. 15; 1924, p. 1; 1927, p. 26.
- travel, interisland, B 15, p. 7; R 1903, p. 421; 1906, p. 25; 1907, p. 20; 1916, p. 28; 1917, p. 38.
- travel, to and from continental United States, B 1, p. 7; R 1903, p. 421; 1904, p. 384; 1927, pp. 2, 25.
- travel to other countries, R 1903, p. 430; 1908, pp. 9, 18; 1910, p. 33; 1913, p. 24.
- Exports of Porto Rico. (See Porto Rico.)
- Falco sparverius loquacula*. (See Falcón.)
- Falcón, B 23, p. 18.
- Faramea odoratissima*. (See Cafeillo tree.)
- Farm—
buildings materials, R 1927, p. 4.
engineering, R 1906, p. 8; 1912, p. 10.
management, R 1917, p. 36; 1918, p. 20; 1919, pp. 31, 35.
- Farmers'—
demonstration work, R 1917, pp. 39, 40; 1918, p. 20.
institutes, R 1905, p. 20.
- Farming in Porto Rico, B 3, p. 50; R 1911, p. 13.
- Fasciola hepatica*. (See Liver fluke.)
- Fat—
in cacao, R 1907, p. 47.
in coffee pulp, R 1907, p. 53.
in stock feeds, R 1909, p. 42.
- Fecal, cattle, examination, R 1926, p. 31.
- Federal farm loan act. (See Rural credits.)
- Feed—
poultry, R 1909, p. 40; 1913, p. 33.
racks, B 29, p. 11.
- Feeding—
cattle, B 29, p. 10.
stuffs, cost and nutritive value, R 1909, p. 42.
stuffs, notes, R 1910, p. 44; 1911, p. 43.
(See also specific kinds.)
- Fence—
for poultry runs, C 19, p. 20.
posts, cement, construction and cost, R 1906, pp. 8, 9.
posts, protecting against ants, R 1903, p. 443.
- Fermentation of cane and banana roots, B 13, p. 11.
- Ferns—
diseases, B 17, p. 13.
insect pests, R 1915, p. 44.
- Ferric chloride—
effect on plant growth, B 12, p. 12.
use in identifying budding stock, B 33, pp. 9, 10; R 1928, p. 27.
- Ferrous sulphate effect on plants, B 12, pp. 12, 13.
- Fertilizer—
efficiency determination, R 1916, p. 11.
importation, R 1922, p. 1; 1928, pp. 7, 8.
requirements of cane soils, C 6, p. 13; B 9, p. 20; R 1905, p. 9.
- Fertilizers—
action, B 8, p. 18.
commercial, C 6, p. 6.
effect on grapefruit quality, R 1920, p. 27.
for pineapples, B 8, p. 18.
for Porto Rico, C 6, p. 10; R 1904, p. 387; 1907, p. 13; 1911, p. 9; 1913, pp. 11, 12; 1915, p. 10; 1917, p. 5; 1922, p. 1.

- Fertilizers—Continued.
 for vegetables, B 7, p. 11; R 1926, p. 8.
 leaching in sandy soil, B 33, p. 6.
 natural, C 6, p. 4.
 use in different countries, B 9, pp. 30, 31, 32, 33.
- Fertilizing materials, analyses, R 1910, p. 28.
- Feterita as cattle feed, R 1928, p. 5.
- Fiber plant—
 culture, R 1901, p. 411; 1903, p. 436; 1904, pp. 386, 395; 1905, p. 17; 1906, p. 15; 1907, p. 12; 1908, p. 13; 1909, p. 11; 1910, p. 12; 1914, p. 11; 1919, p. 12.
 extracting machinery, R 1906, p. 15.
 (See also specific kinds.)
- Ficus*—
carica, R 1903, p. 441; 1905, p. 38.
glomerata. (See Fig., Gúlar.)
oppositifolia. (See Fig., Bengal.)
populnea. (See Fig., wild.)
- Fig.—
 Bengal, R 1903, p. 441; 1905, p. 38.
 Gúlar, R 1903, p. 441; 1905, p. 38.
 wild, R 1903, p. 439; 1904, p. 404.
- Figs, insect pests, R 1903, p. 446.
- Filaria labiato-papillosa* in cattle, R 1927, p. 28.
- Filaria. (See Elephantiasis.)
- Filarial worm—
 in cattle, R 1927, p. 29.
 in mules, R 1928, p. 36.
- Fish—
 importation, R 1901, p. 395.
 mosquito-eating, C 14, p. 7.
 oil. (See Oil.)
 scraps as chicken feed, C 19, p. 21.
 (See also specific kinds.)
- Flacourtie gardnerii*, R 1918, p. 14.
- Flagellata in soils, R 1912, p. 13.
- Flamboyán—
 blanco tree for reforestation, R 1924, p. 7.
 tree as source of honey, B 15, p. 15.
 tree insect pests, R 1912, p. 34.
 tree, value as fertilizer, C 6, p. 7.
- Flame tree. (See Flamboyán.)
- Flax—
 culture, R 1919, p. 12.
 lime-magnesia ratio, C 10, p. 3.
- Flea beetles—
 on beans, beets, okra, R 1915, p. 42.
 on tobacco, B 23, p. 3; R 1907, pp. 17, 34.
 (See also *Systema basalis*.)
- Fleas—
 control, C 17, p. 17; C 19, p. 20.
 on dogs, R 1927, p. 27.
- Flies, repellants, C 17, p. 19.
- Flooding areas for insect control, B 23, p. 22.
- Florida cærulea cærulescens*. (See Garza.)
- Florida—
 red scale, life history, B 10, p. 14.
 red scale parasites, B 10, p. 15.
 scale on citrus, R 1920, p. 24.
- Flour—
 effect of heat fumigation, C 17, p. 23.
 making, R 1905, p. 22.
- Flowers—
 notes, R 1905, p. 18; 1923, p. 3; 1926, p. 9.
 (See also specific kinds.)
- Flowers of sulphur as insecticide and fungicide, B 10, pp. 29, 30; R 1917, p. 29.
- Fogs in Porto Rico, R 1901, p. 389.
- Food—
 commission, notes, R 1917, p. 36.
 crop production, notes, R 1917, p. 7; 1918, pp. 5, 20; 1919, p. 5.
 crops for Porto Rico, R 1901, p. 411.
 of native Porto Ricans, R 1901, p. 390.
 products, fumigating and storing, R 1918, p. 15.
- Foot rot of citrus, B 33, pp. 14, 28.
- Forage crop culture, R 1902, pp. 337, 340; 1912, p. 43; 1920, p. 11; 1921, p. 3; 1926, p. 3; 1927, pp. 5, 6.
- Formaldehyde as soil disinfectant, C 11, p. 4; C 17, p. 25; R 1923, p. 15; 1925, p. 34.
- Formalin—
 effect on pineapple fruit, R 1906, p. 20.
 (See also Formaldehyde.)
- Fourcroya*—
cubensis. (See Century plant, Cuban.)
fatida. (See Century plant.)
gigantea. (See Century plant.)
tuberosa, R 1904, p. 395.
- Frame for fruit drying, R 1928, p. 27.
- Freesia culture at Rio Piedras, R 1902, pp. 337, 342; 1903, p. 434.
- Freesia refracta alba*. (See Freesia.)
- Frijol. (See Cowpeas.)
- Frost, B 3, p. 12.
- Fruit—
 coloring, B 33, p. 31; R 1916, p. 8; 1920, pp. 9, 10; 1923, p. 17.
 exchange, cooperative, R 1913, p. 8; 1915, p. 7; 1919, p. 7.
 growers' association, R 1907, p. 30; 1911, p. 12; 1914, p. 12; 1916, p. 8; 1919, p. 5; 1920, p. 37; 1926, p. 27; 1928, p. 29.
 industry, R 1908, p. 17; 1909, p. 11; 1910, p. 10; 1911, pp. 12, 13; 1912, pp. 7, 9; 1913, p. 8; 1915, p. 7; 1916, p. 8; 1917, pp. 6, 36; 1918, p. 6; 1919, pp. 6, 7; 1920, pp. 9, 27; 1921, p. 26; 1923, p. 1.
 nurseries, R 1903, p. 440.
 pickers, C 8, p. 5.
 rot studies, R 1920, p. 33; 1921, p. 26.
 terms defined, B 24, p. 14.
 tree fertilization, C 6, p. 13.
 trees for reforestation, R 1925, p. 3.
- Fruits—
 packed, paraffin and shellac affecting, R 1920, p. 36; 1921, p. 27.
 packed, temperature affecting, R 1920, p. 35.
 shipping, R 1920, pp. 30-32; 1921, p. 27; 1922, p. 15.
 Temperate Zone, R 1909, p. 20; 1910, p. 28.
 Tropical, R 1902, p. 354; 1904, p. 406.
 (See also specific kinds.)
- Fulgordil bug on coffee, R 1903, p. 444.
- Fuma. (See Carbon bisulphide.)
- Fumigants, C 17, p. 20; R 1908, p. 26; 1923, p. 12.
- Fumigation for cigarette beetle control. (See Cigarette beetle.)
- Fungi—
 as affected by sodium fluoride, C 10, p. 7.
 beneficial, B 10, p. 15.
 mold, activity in wood, C 12, p. 8.
 mold, carbon bisulphide affecting, C 11, p. 6.
 mold, oxidation of products of fermentation, C 12, p. 8.
 propagation and damage, B 7, p. 15.
 (See also specific kinds.)
- Fungicides—
 compatibility chart, C 17, p. 23.
 formulas, C 17; B 7, p. 16; B 10, p. 23.
- Funtumia elastica*. (See Rubber, West African silk.)
- Fusarium*—
batatas on *vanilla*, R 1926, p. 30.
colorans. (See *Spicaria colorans*.)
cubense. (See Bananas, wilt.)
moniliforme on corn, R 1925, p. 37.
sp. on banana, R 1910, p. 36.
sp. on cane, R 1928, p. 35.
sp. on coffee, B 17, p. 28.
sp. on cotton, R 1925, p. 37.
sp. on grapefruit, R 1922, p. 18.
sp. on peppers, R 1925, p. 38.
sp. on vanilla, R 1917, p. 29; 1921, p. 11; 1922, p. 8; 1923, p. 15; 1924, p. 28; 1925, pp. 26, 40.

- Fusarium*—Continued.
 sp., on vanilla. (See also *Fusarium batatas*.)
 sp., notes, R 1927, p. 26.
vasinfectum, R 1916, p. 31; 1925, p. 27.
- Gallinago delicata*. (See *Becacina*.)
- Gallito*—
 as shade for coffee, C 15, p. 24; R 1911, p. 30.
 as soil renovator, R 1912, p. 8.
 as windbreak, B 33, p. 19; R 1920, p. 25.
 insect pests, R 1912, p. 34.
- Ganaspis* sp., R 1912, p. 36.
- Gandul*. (See *Pigeon pea*.)
- Garbanzos*. (See *Chick pea*.)
- Garcinia*—
indica. (See *Kokam butter tree*.)
mangostana. (See *Mangosteen*.)
- Garden crops*—
 at Mayaguez, R 1908, p. 20.
 at Rio Piedras, R 1902, p. 336.
- Gardening*—
 notes, B 7, p. 9; B 20, p. 5; R 1915, p. 28; 1926, p. 7.
 (See also *Vegetables*.)
- Gardens*. (See *School gardens*.)
- Garza* attacking *changa*, B 23, p. 18.
- Garzón blanco*, B 23, p. 18.
- Gases*—
 affecting fruit, R 1922, p. 15.
 in soils, B 13, pp. 10, 18, 21.
- Gasolene lamps* for insect control. (See *Trap lanterns*.)
- Geese* in Porto Rico, R 1906, p. 10.
 "Gelbsucht" of plants, B 11, p. 5.
- Gelechia pictipennis* on tobacco, R 1904, p. 396.
- Genipa americana*. (See *Jagua tree*.)
- Genipa tree*. (See *Jagua tree*.)
- Geology of Porto Rico*, B 3, p. 12.
- Geraniums* in Porto Rico, R 1905, p. 18.
- Ginep tree*. (See *Spanish lime*.)
- Ginger culture*, B 3, p. 9; R 1902, p. 337; 1903, p. 434.
- Glanders* in horses, R 1901, p. 413; 1910, p. 42.
- Glaucoma scintillans* in soils, R 1912, p. 13.
- Glicicidia*—
maculata—
 diseases, R 1925, p. 37.
 for reforestation, R 1904, p. 395.
 interplanted with cacao, R 1904, p. 403; 1905, p. 41; 1907, p. 23.
 interplanted with coffee, R 1919, p. 20.
- sepium*—
 as coffee shade, R 1926, p. 20; 1927, p. 13.
 for reforestation, R 1927, p. 2.
 insect pests, R 1928, p. 17.
- Gloeosporium*—
melongena on eggplant, B 7, p. 38.
musarum on bananas, R 1925, p. 35.
piperatum on peppers, R 1925, p. 38.
rufomaculans on vanilla, R 1917, p. 29.
 sp. on cacao, R 1913, p. 27.
 sp. on *yautia* leaves, B 6, p. 22; R 1904, p. 398.
vanilla on vanilla, R 1925, p. 40.
- Glomerella cingulata* on guava, R 1925, p. 38.
- Gloves* for handling bees, C 13, p. 10.
- Glucose* in cacao, R 1907, p. 47.
- Goat*—
 parasites, R 1926, p. 31; 1927, pp. 27, 28.
 industry, R 1901, pp. 412, 414; 1905, p. 19; 1908, p. 39; 1915, p. 11; 1921, p. 4.
 lemon. (See *Lemon, rough*.)
 manure fertilizing value, R 1910, p. 23.
- Gold mining*, R 1910, p. 7.
- Goniocotes gigas* in chickens, R 1927, pp. 28, 29.
- Gooseberry*. (See *Otaheite*.)
- Gordius aquaticus*. (See *Hair snake*.)
- Gorrión*, B 23, p. 18.
- Gossypium*—
arboreum, R 1904, p. 395.
barbadense, R 1903, p. 465.
- Grabrowskia glabra* for reforestation, R 1903, p. 438.
- Grain fumigation*, C 17, p. 23.
- Grama grass*—
 as forage crop, R 1903, p. 424; 1906, p. 14.
 insects pests, R 1921, p. 23.
 (See also *Paspalum*.)
- Granadillo*, R 1904, p. 393.
- Grapefruit*—
 as source of honey, R 1908, pp. 27, 28.
 canned, R 1925, p. 4.
 commercial plantings, B 33, p. 2.
 culture, R 1909, p. 19; 1913, p. 17; 1918, p. 19; 1919, p. 26; 1921, p. 22; 1922, p. 13.
 curing, C 8, p. 12.
 diseases, B 33, p. 30; R 1905, p. 29; 1912, p. 31; 1913, p. 29; 1914, p. 29; 1922, p. 18; 1928, p. 33.
 (See also *Citrus diseases*.)
 fertilization, B 18, p. 27; R 1920, p. 27; 1928, p. 28.
 identification of stock, B 33, p. 10; R 1928, p. 27.
 industry, B 33, pp. 3, 4; R 1910, p. 10; 1912, p. 9; 1913, p. 8; 1920, pp. 27-32.
 insect pests, R 1909, p. 28; 1912, p. 34.
 juice preservation, R 1917, p. 6; 1918, p. 6; 1919, p. 7; 1920, p. 9.
 notes, B 3, p. 48; B 4, p. 8; R 1903, p. 441; 1904, p. 393; 1905, p. 29.
 rot in transit, R 1920, p. 33.
 scab-resistant, R 1923, p. 16; 1924, p. 29; 1926, p. 30; 1928, p. 32.
 shipping, R 1920, pp. 33-36; 1923, p. 17.
 storing, R 1923, p. 14.
- Grapes*—
 chlorosis in France and Germany, B 11, p. 29.
 culture, R 1903, p. 456; 1904, p. 404; 1906, p. 23; 1907, p. 28; 1908, p. 20; 1910, p. 29; 1920, p. 19.
 diseases, R 1906, p. 23; 1925, p. 38.
 effect of carbon bisulphide on, C 11, p. 9.
 lime-magnesia ratio, C 10, p. 4.
- Graphiola phoenicis* on date palm, R 1903, p. 449.
- Graptophyllum pictum* diseases, B 17, p. 17.
- Grass*, fertilizing value, C 6, p. 5.
- Grasses*—
 notes, R 1915, p. 11.
 relation to animal husbandry, B 29, p. 10; R 1924, p. 5.
 (See also *specific kinds*.)
- Grasshoppers*, R 1902, p. 346.
- Green manure* crop tests. (See *Cover crops*; *Legumes*.)
- Green manuring* effect on cane. (See *Nitrogen economy in soils*.)
- Grevillea robusta*. (See *Silk oak tree*.)
- Gromia terricola*, R 1912, p. 13.
- Grosellas* as source of honey, C 13, p. 29.
- Grosello*. (See *Otaheite gooseberry*.)
- Gryllidae*, B 23, p. 4; R 1902, p. 346.
- Gryllodes muticus*, R 1902, p. 347; 1903, p. 447.
- Gryllotalpa*—
borealis. (See *Mole cricket*, Northern.)
hexadactyla, B 23, p. 4.
 spp., habitat, R 1902, p. 347.
- Gryllotalpidæ*, B 23, p. 4; R 1902, p. 346.
- Guaba*. (See *Guava*.)
- Guaiacum tincture* test for oxidizing enzymes in cacao, R 1907, p. 48.

Guamá tree—

as shade for coffee, C 5, p. 12; C 15, p. 24; R 1901, pp. 398, 399; 1911, p. 30; 1913, p. 23; 1914, p. 33.
as source of honey, C 13, p. 28; B 15, p. 11; R 1908, p. 27; 1911, p. 33.
as windbreak, R 1904, p. 388; 1920, p. 25.

diseases, B 17, p. 17; R 1903, p. 448.
fertilizing value, C 6, p. 7.
for denuded areas, R 1914, p. 9.
insect pests, R 1906, p. 28; 1910, p. 32; 1911, p. 30; 1913, p. 23; 1914, pp. 31, 34; 1917, p. 34.

Guanábana. (*See Sour sop.*)
Guano. (*See Bat guano.*)

Guano tree for reforestation, R 1903, p. 438.

Guapa, B 6, p. 18.

Guara as source of honey, C 13, p. 29; B 15, p. 13.

Guaraguao tree, R 1903, p. 438; 1915, p. 42.

Guarea trichilioides. (*See Guaraguao tree.*)

Guasabára fungus disease, B 28, p. 7.

Guásima tree, R 1903, p. 438.

Guatemala grass—

as forage crop, R 1920, p. 39; 1921, pp. 3, 16; 1923, p. 2; 1924, p. 5; 1925, p. 3; 1926, p. 3; 1927, p. 6.

feeding value, B 29, p. 12.

silage, R 1924, pp. 5, 6.

Guava—

apple. (*See Guava, cabada.*)
as source of honey, C 13, p. 29; B 15, p. 12; R 1911, p. 33.

cabada, R 1903, p. 441.

Calcutta apple, R 1903, p. 441.

cattley, R 1903, p. 441.

Chinese, R 1903, p. 441.

diseases, B 17, p. 13; R 1903, p. 462; 1905, p. 40; 1906, p. 23; 1907, p. 38; 1912, p. 31; 1925, p. 38.

Guinea, R 1903, p. 441.

insect pests, R 1903, p. 446; 1906, p. 28; 1908, pp. 28, 33; 1910, p. 31; 1912, p. 36.

notes, B 3, p. 49; B 13, p. 17; R 1901, p. 410; 1903, p. 449; 1904, p. 406; 1905, p. 40; 1907, p. 23.

pear. (*See Guava, cabada.*)

sour Guisaro, R 1903, p. 441; 1906, p. 23.

tree as shade for coffee, C 5, p. 13; C 15, p. 23; B 15, p. 12; R 1901, pp. 398, 399; 1911, p. 30, 33; 1914, p. 33.

tree as windbreak, R 1920, p. 25.

tree for denuded areas, R 1914, p. 9.

tree on sick soils, C 12, p. 11.

Guayabillo tree, R 1903, p. 438.

Guayabota tree, R 1903, p. 438.

Guayaro fungus disease, B 28, p. 7.

Guazuma guazuma. (*See Guásima.*)

Guerrero tree, R 1903, p. 441.

Guinea fowls—

notes, R 1905, p. 19.

parasites, R 1927, p. 27.

Guinea grass—

as forage crop, R 1905, p. 14; 1906, p. 14; 1907, p. 12; 1908, p. 14; 1926, p. 3.

feeding value, B 29, pp. 10, 12.

notes, B 3, pp. 19, 34, 37.

silage, B 29, p. 13.

Guinea oil palm, R 1925, p. 15.

Guiteras, Juan, C 20, p. 4.

Gum—

blue. (*See Eucalyptus globulus.*)

manna. (*See Eucalyptus viminalis.*)

red. (*See Eucalyptus rostrata.*)

sugar. (*See Eucalyptus corynocalyx.*)

Gumbo. (*See Okra.*)

Gumming of citrus, B 33, p. 14.

Gymnasio nudipes nudipes. (*See Múcaro.*)

Gymnocalidus canadensis. R 1903, p. 438.

Gypsophila. R 1926, p. 10.

Gypsum—

applying to soils, R 1909, p. 18.
effect on plants, B 12, p. 8.

Habas. (*See Beans as source of honey.*)

Habichuela—

cimarrona as cover crop, B 19, p. 23.
parada as cover crop, B 19, p. 24.

(*See also Beans as source of honey.*)

Hæmatobia—

irritans. (*See Horn fly.*)

serrata on cattle, R 1927, p. 27.

Hæmatopinus eurysternus on cattle, R 1927, p. 27.

Hæmatoxylon campechianum. (*See Logwood.*)

Hæmonchus—

contortus. (*See Stomach worms in cattle and goats.*)

similis in cattle, R 1927, p. 27.

Hair snake, B 2, p. 17; R 1902, p. 351.

Hartones. (*See Plantain.*)

Hat making—

notes, R 1903, p. 437; 1906, p. 15; 1907, p. 12; 1908, p. 14; 1909, p. 12; 1910, p. 12; 1914, p. 11; 1915, p. 9; 1916, p. 9; 1918, p. 18; 1919, p. 12.

(*See also Cardulovica sp.; Inodes caesiariae; Sabal caesiariae.*)

Hau tree. (*See Emajagua.*)

Haya tree for reforestation, R 1903, p. 438.

Hawk—

sparrow. (*See Falcón.*)

West Indian, B 23, p. 19.

Heat—

effect on catalase in soils, C 9, p. 11.

insecticidal value, C 17, p. 23.

Hedionda—

diseases, R 1903, p. 449.

notes, R 1902, p. 337; 1903, p. 434.

Hediondilla. (*See Mani cimarrona.*)

Helecho fungus disease, B 28, p. 7.

Helianthus tuberosus. (*See Artichokes.*)

Heliothis—

armiger on corn, R 1903, p. 443.

obsoleta on corn, R 1905, p. 13.

obsoleta on tobacco, R 1914, p. 35.

obsoleta on tomatoes, B 7, p. 55; R 1914, p. 35.

Hellebore, insecticidal value, C 17, p. 6.

Helminthosporium—

gossypii on cotton, R 1925, pp. 28, 37.

inconspicuum on corn, R 1917, p. 30.

oryzae on rice, R 1922, p. 16; 1923, pp. 8, 15; 1925, p. 39.

sacchari on cane, R 1925, p. 36.

sp., on wheat, R 1922, p. 12.

spp., studies, R 1924, p. 29.

turcicum on corn, R 1925, p. 37.

Hemicelluloses in cacao, R 1907, p. 47.

Henelite vastatrix, B 17, p. 28.

Hemiptera, R 1926, p. 6.

Hemispherical scale—

in citrus, B 10, p. 15; R 1906, p. 26;

1907, p. 32; 1908, p. 23.

on coffee, R 1905, p. 46.

parasites, B 10, p. 15.

Hemp. (*See specific kinds.*)

Henequen culture, R 1914, p. 11; 1919, p. 12; 1925, p. 34.

Herbarium, R 1902, p. 356; 1903, p. 430;

1916, p. 29; 1923, p. 15.

Herniaria glabra. (*See Rupture-wort.*)

Herodias egretta. (*See Garzón blanco.*)

Heron, Cuban green. (*See Martinete.*)

Heterakis—

brevispiculum in guinea hens, R 1927, p. 27.

papillosa in chickens, R 1927, p. 27.

Heterodera radicicola. (*See Threadworm.*)

Heterothallism in Phytophthoras, R 1925, p. 29.

Hevea brasiliensis. (*See Rubber, Para.*)

Hibiscus—

abelmoschus. (*See Vegetable musk.*)

rosa sinensis. (*See Pavonia.*)

sabdariffa. (*See Roselle.*)

- Hibiscus*—Continued.
schizopetalus. (See *Hibiscus* spp.)
 spp., as ornamentals, R 1923, p. 5; 1924, p. 16.
 spp., diseases, B 17, p. 9; R 1925, pp. 34, 38.
tiliaceus as source of honey and honey-dew, B 15, p. 15.
- Hicaco. (See *Cocoa* plum.)
- Hides and skins, exportation, R 1901, p. 394; 1913, p. 9.
- Higuana, B 23, p. 17.
- Higüerillo—
 as source of honey, C 13, p. 29.
 tree disease, B 28, p. 7.
 tree for reforestation, R 1903, p. 438.
- Hippocratea *equestris*. (See *Lily*, *Barbados*.)
- Hippodamia convergens*, R 1912, p. 37.
- Hippomane mancinella*. (See *Manzanillo*.)
- Hog plum, R 1904, p. 406.
- Hog products, imported. (See *Meat products*.)
- Hoja menuda tree, R 1903, p. 438.
- Hollyhocks, R 1905, p. 18; 1926, p. 10.
- Holosquiscalus brachypterus*. (See *Black-birds*.)
- Honey—
 handling, C 13, pp. 22–25; B 15, p. 17.
 in beeswax. (See *Beeswax*)
 industry, C 13, p. 5; C 16, p. 3; B 15, pp. 6–10; R 1911, p. 33; 1913, p. 9; 1919, pp. 13, 22.
 notes, R 1909, p. 27; 1918, p. 15.
 producing plants, C 13, p. 27; B 15, p. 11; R 1908, p. 27; 1919, p. 22.
 production, sunlight effect, R 1916, p. 27.
 (See also *Beekeeping*; *Bees*.)
- Honeydew, B 15, p. 15; R 1908, p. 28.
- Hookworm relation to human ankylostomiasis, R 1925, pp. 22, 24; 1926, p. 30.
- Hookworms—
 in cats and dogs, R 1925, p. 23; 1927, p. 27.
 in cattle, R 1925, p. 23; 1927, p. 27.
 "Hormiga brava." (See *Ants*, red.)
- Hormiguilla. (See *Myrmelachista* sp.)
- Horn fly on domestic animals, R 1925, p. 23.
- Hornworms—
 on tobacco, R 1907, pp. 34.
 parasites, R 1907, pp. 35, 36; 1909, p. 27.
- Horse bean. (See *Sword bean*.)
- Horse-radish, cultural directions, B 7, p. 38.
- Horses—
 breeding, R 1909, p. 37; 1910, p. 42; 1911, p. 40; 1912, p. 39; 1913, p. 30; 1914, p. 10.
 diseases and ailments, R 1901, p. 413; 1909, p. 37; 1910, p. 42; 1911, p. 40.
 notes, R 1903, pp. 428, 429; 1904, p. 386; 1905, p. 18; 1906, p. 9; 1907, p. 14; 1908, p. 37; 1918, pp. 9, 22; 1921, p. 4; 1925, p. 1.
 parasites, R 1909, p. 38; 1926, p. 31; 1927, pp. 27, 28; 1928, p. 36.
 urine and excreta composition, C 15, p. 22.
- Horsetail tree. (See *Ironwood*.)
- Horticultural society formation, R 1908, p. 17.
- Horticulture, tropical, R 1903, p. 422; 1905, p. 23; 1907, p. 20; 1909, p. 19; 1913, p. 16; 1914, p. 17.
- Houses and huts, R 1901, p. 390.
- Hovenia dulcis*, R 1904, p. 393.
- Hueso blanco, R 1903, p. 438.
- Humidity, effect on insects, B 2, p. 8.
- Humus—
 as affected by calcium carbonate. (See *Calcium carbonate*.)
 as affected by heat, C 11, p. 4.
 formation in the Tropics, R 1909, p. 17; 1912, p. 15.
 need in Porto Rican soils, B 14, p. 22.
- Hura crepitans*. (See *Molinillo tree*.)
- Hurricanes. (See *Storms*.)
- Hyacinths, R 1902, pp. 337, 342; 1903, p. 435.
- Hyalodiscus guttula*, R 1912, p. 13.
- Hyalodiscus limax*, R 1912, p. 13.
- Hydrochloric acid—
 effect on plants, B 12, pp. 12, 13.
 in Lima beans. (See *Lima beans*, *poisonous*.)
 gas as fumigant, C 17, p. 21; B 11, p. 21; R 1908, p. 26; 1923, p. 12.
 gas insecticidal value, C 17, p. 21; R 1906, p. 26.
- Hydrogen-ion potentiality—
 of pineapple soils, R 1925, p. 8.
 of sap in pineapple plant, R 1927, p. 21.
- Hydrometers, C 17, p. 15.
- Hygro-thermograph, R 1920, p. 35.
- Hymenea courbaril*, notes, B 15, p. 13; B 21, p. 7; R 1903, pp. 438, 443.
 (See also *Algarrobo*.)
- Hymenopterous parasites, R 1903, pp. 445, 447, 456; 1907, p. 36; 1912, p. 37.
- Hyostrengulus rubidus* in swine, R 1925, p. 23; 1927, p. 27.
- Hypoderma* sp. (See *Ox warble fly*.)
- Icerya montserratensis* on oranges, R 1907, p. 38.
- Icterus. (See *Chlorosis in plants*.)
- Icterus portoricensis*. (See *Calandra*.)
- Ilex paraguayensis*. (See *Paraguay tea*.)
- Ilma, B 15, p. 15.
- Imports of Porto Rico. (See *Porto Rico exports and imports*.)
- Indian hemp, R 1905, p. 17.
- Indian madár, R 1903, p. 436.
- "Indica" scale on mangoes, R 1911, p. 35.
- Indio tree, R 1903, p. 438.
- Infusoria—
 notes, C 12, p. 9; R 1909, p. 16.
 (See also *Protozoa*.)
- Inga*—
fastuosa, R 1913, p. 24.
laurina. (See *Guamá*.)
vera. (See *Guava*.)
- Injerta tree. (See *Oranges*, *bittersweet*.)
- Inoculation for legumes, C 6, p. 8.
- Inodes causiarum*, R 1903, p. 437.
- Insect pests in Cuba, R 1910, p. 33.
- Insectarium construction, R 1917, p. 31.
- Insecticides—
 compatibility chart, C 17, p. 23.
 formulas, C 17; B 7, p. 18; B 10; R 1908, p. 28.
 (See also *specific kinds*.)
- Insects—
 beneficial and injurious, C 17, p. 22.
 biting, B 7, p. 18.
 collection of economic, R 1902, p. 356; 1903, p. 430.
 notes, R 1902, p. 342; 1903, p. 442; 1904, p. 396.
 storms affecting. (See *Storms*.)
 sucking, B 7, p. 18.
 transferring from plants to cages, R 1921, p. 24.
 (See also *specific kinds*.)
- Insular department of agriculture, establishment, R 1924, p. 1.
- Invertebrates, B 23, p. 16; R 1926, p. 5.
- Iodin, for sorehead in chickens, R 1910, p. 44; 1912, p. 42.
- Ipil-ipil for reforestation, R 1924, p. 7.
- Iron—
 assimilation by rice. (See *Rice*.)
 in plants, determination, R 1914, p. 13.
 immobility in plants, R 1916, p. 14; 1917, p. 16.
 natural, in Porto Rico, R 1915, p. 9.
 sprays for chlorosis. (See *Chlorosis*.)
- Ironwood—
 as windbreak, B 33, p. 21.
 for reforestation, R 1904, p. 395; 1924, p. 7; 1925, p. 3.

- Irrigation—
 at the station, R 1904, p. 384; 1921, p. 7.
 for cane, B 9, pp. 18, 19; R 1908, p. 10; 1923, p. 9.
 for celery, B 7, pp. 28, 30.
 for Porto Rico, B 3, p. 41.
 for tobacco, B 5, p. 15.
 surface v. subsurface, for vegetables, R 1912, p. 27.
- Isariopsis griseola* on beans, R 1917, p. 29.
- Ischnosiphon aroma*, R 1903, p. 437.
- Jicama tree, R 1903, p. 438.
- Jack bean—
 as cover crop, B 19, p. 12.
 for coconut plantations, R 1914, p. 20.
 for coffee plantations, C 15, p. 20.
 for pineapple plantations, R 1911, p. 25; 1914, p. 21.
- Jack fruit, R 1905, p. 35; 1906, p. 23; 1909, p. 22; 1922, p. 8.
- Jagua tree, R 1903, pp. 438, 441; 1905, p. 38.
- Jamaica—
 pod disease. (See *Colletotrichum cradwickii*.)
 sorrel. (See Roselle.)
- Jambosa*—
jambolana. (See Pomarosa.)
jambos. (See Pomarosa.)
vulgaris. (See Pomarosa.)
- Japanese—
 beetle fungus. (See *Metarrhizium anisopliae*.)
 cane as forage crop, B 29, p. 11; R 1920, p. 12; 1925, p. 4; 1926, p. 3; 1927, p. 6; 1928, pp. 5, 7.
- Jars for seed preservation, B 20, p. 26; R 1915, p. 28.
- Java—
 grass as forage crop, B 29, p. 10; R 1921, p. 3; 1926, p. 5.
 plum, R 1903, p. 441; 1905, p. 37.
- Javillo tree. (See Molinillo.)
- Jelly making from tropical fruits, R 1905, pp. 38, 39; 1907, p. 23; 1918, p. 14. "Jewess." (See Blackbirds.)
- Jipijapi. (See *Cardulovica* spp.)
- Jobo amarillo, insect pests, R 1912, p. 36.
- Jobo de la India—
 insect pests, R 1912, p. 36.
 notes, R 1903, p. 441; 1904, p. 406.
- Jobo—
 farm location, C 12, p. 22.
 tree as source of honey, C 13, p. 28; B 15, p. 12.
- tree, notes, B 15, p. 12; R 1904, p. 406.
- Job's tears as forage crop, R 1921, p. 16.
- Johnson grass—
 as forage crop, R 1903, p. 424.
 in Cuba, R 1910, p. 33.
- Judfo. (See Blackbirds.)
- Juglans*—
californica, R 1904, p. 393.
regia, R 1904, p. 393.
sieboldiana, R 1904, p. 393.
- Jujube, R 1903, p. 441.
- Jui, B 23, p. 18.
- Julian chiví, B 23, p. 18.
- Jute—
 true, R 1903, p. 437; 1919, p. 12.
 wild, as source of honey, B 15, p. 13.
 wild, fungus disease, B 28, p. 7.
 wild, notes, R 1903, p. 436; 1905, p. 22; 1925, p. 9.
- Kafir corn, R 1902, pp. 337, 341; 1903, pp. 421, 424; 1916, pp. 7, 10; 1928, p. 5.
- Kaki. (See Persimmons.)
- Kale—
 as forage crop, R 1905, p. 16.
 cultural directions, B 7, p. 39.
 insect pests, R 1907, p. 35.
 notes, R 1922, p. 2.
- seed deterioration, B 20, p. 29.
- Kapok, R 1903, p. 437.
- Karri tree. (See *Eucalyptus diversicolor*.)
- Kei apple—
 culture, R 1905, p. 35; 1906, p. 24.
 notes, R 1903, p. 441.
- Kerosene and grease for chicken-head insects, C 19, p. 20.
- Kerosene emulsion—
 for infested cane seed, R 1907, pp. 36, 37.
 for infested pineapple slips, R 1907, pp. 37, 38.
 formulas, C 17, p. 10; B 7, p. 19; B 10, pp. 27, 28; R 1907, p. 33.
 insecticidal value, B 2, p. 16; B 5, p. 19; R 1902, p. 350; 1903, p. 446; 1907, pp. 32, 35, 38; 1908, pp. 24, 25.
 spray for citrus, B 10, p. 19.
 spray for pineapple plants, C 7, p. 2.
- Kerstingiella as forage crop, R 1913, p. 33.
- Kieserit. (See Magnesium sulphate.)
- Kikuyu grass as forage crop, R 1920, p. 39.
- Knapp, S. A., report on Porto Rico, R 1901, p. 381.
- Kohlrabi culture, B 7, p. 39; R 1920, p. 23; 1922, p. 2; 1923, p. 3; 1926, p. 8.
- Kokam butter tree, R 1903, p. 440; 1905, p. 38.
- Kolla similis* on cane, R 1921, p. 24.
- Kuhneola gossypii* on cotton, R 1925, p. 37.
- Kumquat, R 1903, p. 441; 1904, p. 392; 1909, p. 19.
- Labor—
 coolie, R 1903, p. 439.
 problems and laborers, B 3, p. 51; R 1901, p. 391; 1915, pp. 8, 9; 1916, p. 9; 1918, p. 9; 1920, p. 13.
 wages, B 3, p. 51; R 1904, p. 385; 1911, p. 9.
- La Carmen farm. (See Experiment station.)
- Lace making, R 1915, p. 9.
- Lacewing—
 fly, notes, R 1903, p. 446.
 on eggplants, R 1915, p. 43.
- Lachnopus* sp., on coffee, R 1906, p. 28.
- Lachnostenra*—
citri, R 1926, p. 6.
 sp. (See May beetle.)
- Lacquer making, R 1927, p. 2.
- Ladybird beetles, notes, R 1907, p. 36.
 (See also *Cryptolæmus montrouzieri*.)
- Lamellicorn beetles on bananas and citrus, R 1903, p. 446; 1904, p. 396.
- Lands. (See Porto Rico.)
- Lantana as source of honey, B 15, p. 13.
- Lantana* spp. (See Lantana.)
- Lanterns for insect control. (See Trap lanterns.)
- Lapas. (See Slugs.)
- Laphyrgma frugiperda* on corn, R 1912, p. 34.
- Lard importation, R 1920, p. 7.
- Larkspur, R 1926, p. 10.
- Larvicide for mosquitoes, C 17, p. 16.
- Lasioderma serricorne*. (See Cigarette beetle.)
- Laundering, R 1901, p. 390.
- Lead—
 acetate—
 for lame animals, R 1925, p. 24.
 fungicidal and insecticidal value, B 10, p. 23.
- arsenate—
 compatibility chart, C 17, p. 23.
 fungicidal and insecticidal value, C 17, p. 6; B 7, p. 19; B 10, p. 23; R 1907, pp. 32, 35, 36; 1908, p. 25.
- Leaf—
 beets. (See Chard.)
 mold v. soil planting, B 26, p. 14; R 1917, p. 27.
 roller on beets, R 1902, p. 343.
- Leafhoppers—
 on cane, B 9, p. 39; R 1919, p. 22.
 on corn, R 1923, p. 13.
 on cowpeas and beans, R 1902, p. 342.

- Lebbek tree for reforestation, R 1903, p. 438; 1924, p. 7.
- Lecanium hemisphaericum*—
on cassava, R 1903, p. 447.
on coffee, R 1903, pp. 444, 463; 1904, p. 399.
on oranges, R 1903, pp. 445, 458.
on soursop, R 1903, p. 446.
parasites, R 1903, pp. 444, 445, 463; 1904, p. 399.
- Leche prieta, R 1903, p. 438.
- Lechecillo, B 28, p. 7; R 1903, p. 438.
- Leech on cattle, R 1928, p. 36.
- Leek culture, B 7, p. 39.
- Legumes—
as forage crop, B 29, p. 11; R 1904, p. 387; 1905, p. 15; 1906, p. 14; 1927, pp. 5, 6; 1928, p. 5.
as nurse crop and soil renovator, C 6, p. 7; B 7, p. 11; R 1903, p. 423; 1905, p. 15; 1914, pp. 8, 9; 1915, p. 8; 1917, p. 5; 1918, p. 16; 1919, p. 8; 1922, p. 1; 1923, p. 2; 1924, p. 7; 1925, p. 3; 1927, p. 2.
as shade, C 15, p. 23; R 1912, p. 8; 1919, p. 20; 1920, p. 25.
as windbreaks, B 33, p. 19.
for coconut plantations, B 19, p. 26; R 1913, p. 9; 1914, p. 19.
lime-magnesia ratio, C 10, p. 3.
notes, B 18, p. 18; R 1915, p. 10; 1920, p. 6.
wild, B 19, p. 21.
- Leguminosæ, ash content, B 16, p. 10.
- Lemon—
Caracas sweet, R 1903, p. 441.
culture, R 1904, p. 392; 1909, p. 19.
diseases, B 33, p. 14.
harvesting, C 8, p. 6.
rough, diseases, R 1904, p. 398; 1905, p. 23.
rough, identification, B 33, p. 10; R 1928, p. 27.
rough, notes, B 4, p. 8; R 1903, p. 441; 1907, p. 31; 1913, p. 17.
scab, R 1913, p. 29.
sweet, R 1903, p. 440.
- Lemons—
as source of honey, B 15, p. 13.
curing, C 8, p. 12.
introduction, B 33, p. 2.
notes, B 3, p. 48; R 1901, p. 407; 1905, p. 30.
- Lengua de vaca fungus disease, B 28, p. 7.
- Lepidopterous—
larvae, B 23, p. 17; R 1915, p. 44.
stem borer on beans, R 1903, p. 448.
- Lepidosaphes beckii*. (See Purple scale.)
- Leptosphaeria sacchari* on cane, R 1925, p. 36.
- Leptospora musæ*, R 1915, p. 38.
- Lespedeza, R 1928, p. 5.
- Lettuce—
culture, B 7, p. 39; R 1902, pp. 337, 339; 1903, p. 424; 1920, p. 21; 1922, p. 2; 1926, p. 8; 1928, p. 10.
diseases, R 1925, p. 38.
marketing, B 7, p. 40.
seed deterioration, B 20, pp. 6, 23.
- Leucaena glauca*. (See Ipil-ipil.)
- Leucoptera* (*Cemiostoma*) *coffeella*—
life history, R 1914, pp. 32, 33.
notes, C 5, p. 5; B 30, p. 15; R 1907, p. 40; 1912, p. 35.
on coffee, R 1903, pp. 444, 454, 460; 1904, p. 389; 1905, p. 46; 1906, pp. 28, 32.
parasites, R 1904, pp. 389, 397, 399; 1905, p. 22; 1914, p. 33.
- Leucotermes* sp., R 1915, p. 44.
- Lice—
on cattle and goats, R 1926, p. 31.
on plants. (See Plant lice.)
on poultry, C 17, p. 7; C 19, p. 20.
- Lichens on coffee, R 1903, p. 448.
- Light, effect on chlorosis, B 11, p. 42.
- Lightning injury to coconut palms, R 1925, p. 25.
- Lights, use in insect control. (See Trap lanterns.)
- Lilies—
notes, R 1902, pp. 337, 342; 1903, p. 434.
on different soils, R 1910, p. 17.
- Lilium*—
candidum. (See Lilies.)
harrisii. (See Lily, Easter.)
longiflorum. (See Lilies.)
longiflorum eximium. (See Lilies.)
longiflorum giganteum. (See Lilies.)
- Lily—
Barbados, R 1903, p. 435.
Easter, R 1903, p. 434.
- Lima. (See Lemon, sweet.)
- Lima beans—
notes, R 1920, p. 22.
poisonous, R 1919, pp. 10, 20.
- Lime—
air-slaked, as seed preservative, C 17, p. 19; C 18, p. 22; B 27, p. 6.
air-slaked, insecticidal value, R 1928, p. 10.
as disinfectant in sheds, B 29, p. 14.
burnt, analyses, R 1910, p. 23.
burnt, cost in Porto Rico, B 9, p. 23.
fertilizing value for coffee, B 31, pp. 21, 23.
for dusting tomatoes, R 1917, p. 29.
function in plants, C 10, p. 6.
fungicidal and insecticidal value, C 17, pp. 18, 26; B 10, p. 29; R 1902, p. 350; 1903, p. 446.
in plant ashes, R 1912, pp. 21, 22.
induced chlorosis. (See Chlorosis.)
need in Porto Rican soils, C 6, p. 5; B 9, p. 23; B 14, p. 22; R 1922, p. 4.
magnesia ratio requirements of plants, B 12; C 10; R 1908, pp. 40-44; 1909, p. 18; 1911, p. 18.
- Limes—
as budding stock, B 4, p. 9.
as source of honey, B 15, p. 13.
insect pests, R 1903, p. 445.
introduction, B 33, p. 2.
notes, B 3, p. 47; R 1901, p. 407; 1903, p. 441; 1904, p. 392; 1909, p. 19.
sweet, R 1903, p. 441.
- Limestone—
analyses, B 11, p. 22; R 1910, pp. 23, 24.
deposits, C 6, p. 6; B 3, pp. 12-16.
effect on plants. (See Soils, calcareous.)
(See also Soils, calcareous; "Tosca.")
- Lime-sulphur—
compatibility chart, C 17, p. 23.
fungicidal value, B 33, pp. 27, 28.
solution, effect on fruit, R 1906, p. 26.
solution, formulas, C 17, pp. 14, 15, 27; B 7, p. 18; B 10, p. 29; R 1917, p. 30.
- Limewater, effect on seed germination, R 1905, p. 10; 1924, p. 4.
- Liming—
cane soils, B 9, p. 23; R 1910, p. 24.
coffee soils, B 21, p. 9.
- Limón—
agrio, R 1903, p. 441.
bobo. (See Lemon, rough.)
de cabra. (See Lemon, rough.)
dulce. (See Limes, sweet.)
- Linognathus* sp. on goats, R 1927, p. 27.
- Linoleum filler, R 1927, p. 3.
- Lipeurus* sp., in chickens, R 1927, p. 29.
- Lippia nodiflora* as source of honey, B 15, p. 15.
- Litchi, R 1925, pp. 14, 15.
- Lithocelletis ornatella*. (See Locust leaf Tineid.)
- Liver fluke—
in cattle, B 29, p. 9; R 1925, p. 23; 1927, p. 27; 1928, pp. 36, 37.
in goats and swine, R 1927, p. 28.

- Liver fluke—Continued.
 in poultry, R 1926, p. 30.
 studies, R 1927, p. 31; 1928, p. 36.
- Liverworts on coffee, R 1903, p. 448.
- Livestock—
 exportation, R 1901, p. 394; 1908, p. 37.
 industry, B 3, p. 11; R 1901, p. 412; 1903, p. 428; 1906, p. 9; 1907, p. 14; 1908, p. 15; 1909, p. 13; 1910, pp. 11, 41; 1911, p. 40; 1913, p. 9; 1915, p. 11; 1916, p. 10; 1918, p. 9; 1919, p. 11; 1922, p. 3; 1925, p. 1; 1926, p. 2.
 relation to agriculture, R 1920, p. 7.
 (See also specific kinds.)
- Livingstonea* sp., B 23, p. 8.
- Lizards, B 2, p. 18; B 23, p. 17; R 1902, p. 351.
 "Llaga" in cattle, R 1910, p. 43.
- Llerén culture, B 7, p. 41; R 1903, p. 433.
- Lobelia, R 1905, p. 18.
- Locust leaf Tineid, R 1905, p. 22.
- Locustidæ, R 1902, p. 346.
- Logwood—
 as source of honey, B 15, p. 15.
 notes, R 1903, p. 438.
- Lonchæa chalybea* on cassava, R 1903, p. 447; 1904, pp. 392, 396.
- London purple, insecticidal value, C 17, p. 5.
- Loquat, R 1903, p. 441; 1905, p. 37; 1906, p. 23; 1908, p. 22; 1909, p. 22.
- Loranthus* sp., R 1903, p. 448.
- Lucuma*—
mammosa. (See Marmalade fruit tree.)
multiflora. (See Jácana tree.)
rivicola angustifolia. (See Cuban ti-es tree.)
- Luffa*—
egyptica disease, B 17, p. 9.
 sp., R 1902, p. 337.
- Lumbang oil. (See Candlenut.)
- Lumber, R 1927, p. 4.
- Lungworms in cattle and swine, R 1925, p. 23.
- Lupines—
 as forage crop, R 1905, p. 16.
 citric acid effects, R 1908, p. 41.
 lime effects, B 11, p. 29; B 12, p. 9; B 16, pp. 8, 11.
 on acid soil, B 13, p. 8.
- Lupinus*—
albus, B 11, p. 29.
mutabilis, B 11, p. 29.
nanus, B 11, p. 29.
- Luquillo forest reserve, R 1903, p. 419.
- Lynnx cubensis*, R 1928, p. 36.
- Lyon bean as cover crop, B 19, p. 17; R 1913, p. 18; 1914, p. 20.
- Mabolo tree, R 1925, p. 15.
- Macadamia ternifolia*, R 1904, p. 393.
- Machinery—
 agricultural, R 1901, p. 412.
 for extracting fiber, R 1914, p. 11; 1919, p. 12.
- Macranthorhynchus hirudinaceus*. (See Thorny headed hog worm.)
- Macrosporium*—
brassicæ on cabbage, B 7, p. 27.
parasitica on onions, R 1925, p. 38.
- Madagascar tamarind. (See Tamarind.)
- Madder roots on calcareous soils, B 16, p. 9.
 "Madre de cacao." (See *Gliricidia maculata*.)
- Maga tree for reforestation, R 1924, p. 7.
- Magnesia—
 effect on seed germination, R 1905, p. 10.
 function in plants, C 10, pp. 3, 6.
 in cassava ash, R 1912, p. 22.
- Magnesium—
 carbonate, effect on pineapple plant, B 11, p. 25.
 chloride, effect on cacao beans, R 1926, p. 7.
 sulphate, effect on cane germination, R 1924, p. 4.
 sulphate source, C 10, p. 5.
- Magnolia splendens*, R 1903, p. 438.
- Maguey. (See Century plant.)
- Mahogany—
 for reforestation, R 1904, p. 395; 1909, p. 13; 1918, p. 8; 1919, p. 11; 1923, p. 2; 1924, p. 7; 1925, p. 3; 1927, p. 2.
 insect pests, R 1915, p. 44.
 notes, R 1914, p. 26; 1916, p. 24.
 swamp. (See *Eucalyptus robusta*.)
- Maize. (See Corn.)
- Majugua. (See Emajagua.)
- Malagueta tree for reforestation, R 1903, p. 438.
- Malanga. (See Taro.)
- Malaria, C 14, p. 5; C 20, pp. 3, 4.
- Malojillo. (See Para grass.)
- Malpighia glabra*. (See Barbados cherry.)
- Malvaceæ, R 1903, p. 436.
- Mamey—
 as windbreak, R 1904, p. 388.
 leaves for shading plants, R 1904, p. 417.
 leaves, for wrapping plants, B 2, p. 12; B 5, p. 20; B 23, p. 20; R 1902, p. 349; 1904, p. 417.
 sapote. (See Marmalade fruit tree.)
- Mameyuelo, R 1903, p. 438.
- Mammea americana*. (See Mamme apple.)
- Mamme apple, notes, R 1903, p. 441; 1905, p. 39.
 (See also Mamey.)
- Manati, location, B 18, p. 27.
- Mancha de hierro, B 17, pp. 9, 11, 13; R 1914, p. 29.
- Manchineel. (See Manzanillo.)
- Mandarin tree, R 1909, p. 19.
- Mange mite in swine, R 1928, p. 36.
 (See also *Demodex folliculorum*.)
- Mangels as forage crop, R 1912, p. 43.
- Mangifera indica*. (See Mangoes.)
- Mangoes—
 as ornamentals, B 24, p. 28.
 as source of honey, C 13, p. 29; B 15, p. 13; R 1908, p. 27.
 as windbreaks, B 10, p. 17; R 1904, p. 388; 1907, p. 33; 1911, p. 34.
 cannning, R 1925, pp. 4, 5.
 culture, B 24, pp. 1-14; R 1904, p. 403; 1906, p. 20; 1907, p. 26; 1908, p. 19; 1909, pp. 13, 21; 1910, p. 27; 1911, p. 27; 1912, p. 25; 1914, p. 17; 1915, p. 26; 1916, p. 19; 1917, p. 21; 1918, p. 12; 1919, pp. 8, 16; 1922, p. 6; 1925, p. 14; 1927, p. 13.
 diseases, B 17, p. 13; R 1910, p. 28; 1911, p. 36; 1925, p. 38.
 dried, R 1918, p. 13.
 fruit description, R 1901, p. 409.
 insect pests, B 24, p. 24; R 1908, p. 28; 1911, pp. 34, 35, 36; 1912, p. 36.
 notes, B 18, p. 18; R 1904, p. 393; 1923, p. 2.
 pollination by bees. (See Bees.)
- Polyembryonic*, R 1927, p. 13.
- propagation, B 24, pp. 9-13; R 1921, p. 13.
- seed germination, B 24, p. 9; R 1905, p. 33.
- shipping and storing, B 24, p. 26; R 1907, p. 26; 1910, pp. 27, 28; 1915, p. 27; 1919, pp. 17, 18.
- soil, B 24, p. 4.
- varieties, B 24, p. 14; R 1919, p. 17; 1920, p. 18; 1922, p. 6.
- weights of different parts of fruit, B 24, p. 23.
- wind effects. (See Winds.)
- Mangosteen—
 culture, R. 1904, pp. 393, 406; 1905, p. 38; 1925, p. 14.
 diseases, R 1915, p. 35.
- Mangrove—
 black, as source of honey, B 15, p. 14.
 swamps, R 1901, p. 385.
 (See also Swamps.)
- Mangroves, notes, B 3, p. 21.
- Mani cimarrona, as cover crop, B 19, p. 21.

- Manihot**—
glaziovii. (See Rubber, Ceara.)
palmeta aipi. (See Cassava.)
utilissima. (See Cassava.)
- Manila hemp**—
 culture, R 1903, p. 436; 1904, p. 389;
 1906, p. 15; 1907, p. 12.
 diseases, R 1925, p. 29.
- Manson's eyeworm in poultry, R 1928, p. 36.
- Mantidae**, R 1902, p. 346.
- Manure**—
 "dry rotting," C 12, pp. 7, 8.
 effect on cane seed germination, R 1925, p. 20.
 for coffee plantations, C 15, p. 22.
 for orange groves, B 4, p. 17.
 for sandy soils, B 33, p. 6.
 for vegetable growing, B 7, p. 11.
 natural, C 6, p. 4.
- Manures, effect on catalase in soils, C 9, p. 12.
- Manuring with lime and magnesia, principles, C 10.
- Manzanillo as source of honey, B 15, p. 14.
- Mapola. (See Lily, Barbados.)
 "Maraca." (See Canna, edible.)
- Maranta arundinacea*. (See Arrowroot.)
- Marasmius*—
plicatus on cane, B 9, p. 38.
sacchari on cane, C 12, p. 19; B 9,
 p. 10; R 1909, p. 36.
 sp. in soils, B 13, p. 13.
- Margarops fuscatus fuscatus*. (See Zorzal negro.)
- Margaropus*—
annulatus. (See Cattle tick.)
annulatus australis. (See Cattle tick.)
- Maritime pine, B 16, p. 8.
- Marketing**—
 agricultural products, R 1925, p. 4.
 association, B 8, p. 35; R 1914, p. 12.
- Marmalade**—
 from citrus, R 1918, p. 6.
 fruit tree, R 1903, p. 441.
- Martinete, B 23, p. 18.
- Mascarenhasia elastica*—
 notes, R 1910, p. 39.
 (See also Rubber.)
- Mat weaving, R 1919, p. 12.
- Mato de la playa as cover crop, B 19, p. 25.
- Mato tree, R 1903, p. 438.
- Matracá as cover crop, B 19, p. 22; R 1923, p. 5.
- Mauritius bean as cover crop, B 19, p. 17; R 1914, p. 20; 1920, p. 16.
- May beetle**—
 notes, C 4, p. 3; B 2, p. 9; R 1914,
 p. 34; 1926, pp. 5, 6.
 on cane, B 9, p. 39; R 1909, p. 25;
 1910, p. 31; 1916, p. 26.
 on citrus, B 10, p. 10; R 1903, p.
 459; 1905, p. 28; 1907, p. 32;
 1908, p. 25.
 on coffee, R 1912, p. 35.
 parasites, R 1912, pp. 35, 36.
- May beetles in Cuba, R 1910, p. 33.
- Mayaguez, location, C 20, p. 9.
- Mealy bugs**—
 on cacao, R 1913, p. 28.
 on cane, R 1907, p. 36; 1919, p. 21.
 on coffee, R 1903, p. 462.
 on guava, R 1908, p. 28.
 on pineapples, C 7; R 1906, p. 27;
 1907, p. 37; 1908, p. 26; 1911, p. 25.
- Meat**—
 as chicken feed, C 19, p. 21.
 products imported into Porto Rico, B 29, p. 4; R 1901, p. 395.
- Meats**—
 notes, R 1907, p. 14; 1910, p. 11;
 1913, p. 9.
 preservation, R 1909, p. 40.
- Medical board of the United States Army in Cuba, C 20, p. 4.
- Mediterranean fruit fly, R 1918, p. 17.
- Megalopyge krugii*. (See Chiva.)
- Melanchozia cephaea* on grosella, R 1914, p. 31.
- Mélanose on oranges, R 1901, p. 415.
- Melicocca bijuga*. (See Spanish lime.)
- Melilotus* spp. (See Clover, sweet.)
- Melinis minutiflora*. (See Molasses grass.)
- Meliola mangiferae* on mangoes, R 1911, p. 36; 1925, p. 38.
- Melipona januaria* on guama, R 1917, p. 34.
- Melittia satyriniformis* on squash, B 7, p. 51.
- Melon de China. (See Muskmelon.)
- Melon**—
 diseases, R 1917, p. 29.
 insect pests, R 1903, p. 448; 1923, p. 14.
 notes, R 1901, p. 411; 1904, p. 393;
 1926, p. 9; 1928, p. 11.
- Memorial of agriculturists of Porto Rico to station, R 1924, p. 2.
- Menopon pallidum* in chickens, R. 1927, p. 29.
- Merker grass as forage crop, R 1920, p. 39.
- Metarythizium anisopliae*—
 attacking changa, B 23, p. 19.
 propagating, R 1912, pp. 36, 37.
- Metastrongylus*—
brevivaginatus in swine, R 1927, p. 28.
elongatus in swine, R 1927, p. 28.
- Meteorological data, R 1902, p. 356; 1903, p. 426.
- Miconia* spp., disease, B 17, p. 17.
- Microbes, effect of sun, C 12, p. 23.
- Micrococcus nigrofasciens*, B 23, p. 20; R 1914, p. 34.
- Microspira*—
destuarii, C 12, p. 18.
desulfuricans, C 12, p. 18.
- "Miel," B 5, p. 32.
- Milk**—
 and milking, B 29, pp. 14, 15; R 1901, p. 414; 1907, p. 15; 1909, p. 40;
 1916, p. 10; 1924, p. 5; 1925, p. 2.
 importation, B 29, p. 4; R 1927, p. 7.
 sheds, B 29, p. 13.
 yield, increasing, R 1928, p. 4.
 yield, salt effect on, B 29, p. 12.
 (See also Cattle breeding; Dairy-ing.)
- Mill feed for cattle, R 1928, p. 4.
- Millet**—
 at Rio Piedras, R 1902, p. 337.
 citric acid effect on, R 1908, p. 41.
 fertilization, B 25, p. 21.
 lime-magnesia ratio, B 12, p. 9.
 on acid soils, B 13, p. 8.
 pearl, R 1912, p. 44.
- Milling by-products, R 1909, p. 42.
- Millipedes, R 1926, p. 6.
- Milo, R 1916, p. 7.
- Milo maize as cattle feed, R 1928, p. 5.
- Mimociehla ardosiaeae portoricensis*. (See Zorzal.)
- Mimus polyglottos orpheus*. (See Ruiñen.)
- Mimusops nitida*, B 23, p. 20.
- Mineral**—
 nutrients in soils. (See Soils.)
 nutrients in tropical dietetics, R 1912, p. 17.
 nutrition of pigs. (See Swine.)
- Mirlo, B 2, p. 18; R 1902, p. 351.
- Mite**—
 on cassava, R 1903, p. 447.
 on oranges, B 10, p. 19.
 red, B 2, p. 17; R 1902, p. 351.
- Moca tree**—
 as shade for coffee, C 15, p. 24; R 1901, pp. 398, 399.
 as source of honey, C 13, p. 28; B 15, p. 12.
 fungus disease, B 28, p. 7.
- Moisture absorption by clay cylinders, R 1925, pp. 7, 8.
- Molasses**—
 and coffee pulp as hog feed, R 1907, p. 53.
 as cattle feed, B 29, p. 11; R 1905, pp. 10, 11.

- Molasses—Continued.
as source of alcohol. (*See Alcohol.*)
exportation, R 1901, p. 394; 1908, p.
10; 1910, p. 7.
feeding value and cost, R 1909, p. 42.
grass as forage crop, R 1912, p. 44.
manufacture in Porto Rico, B 3, p. 9.
- Mold. (*See Fungi.*)
- Mole cricket—
black, of Mexico, B 2, p. 17; R 1902,
p. 346.
Northern, B 2, pp. 8, 9.
West Indian. (*See Changa.*)
- Mole crickets in soils, R 1925, p. 10.
- Molinillo tree, R 1903, p. 443.
- Monas in soils, R 1912, p. 13.
- Mongoose—
destructive to poultry, R 1909, p. 39;
1928, p. 12.
notes, R 1926, pp. 30, 31.
- Moniezia alba* in cattle, R 1927, p. 28.
- Monilia* sp., on cattle, R 1925, p. 24.
- Monosaccharide-hexoses in pineapple leaves,
R 1927, p. 22.
- Monstera deliciosa*. (*See Ceriman.*)
- Moon, supposed effect on crops, R 1922,
p. 2.
- "Moquillo." (*See Roup.*)
- Morning-glories, insect pests, R 1921, p. 23.
- Morongia leptoclada*, R 1917, p. 34.
- Morrill Act, extension to Porto Rico, R
1908, p. 9.
- Morro castle, B 3, p. 8.
- Morus alba*. (*See Mulberry, white.*)
- Mosquito survey—
in Mayaguez, C 20; R 1920, p. 23;
1921, p. 26.
in San Juan, C 14.
- Mosquitoes—
descriptions, C 20, p. 5.
food, C 14, p. 8.
house-frequenting of North, C 14, p. 8.
house-frequenting of Tropics, C 14, pp.
6, 8; C 20, p. 5.
life history, C 14, pp. 8, 22.
malarial, C 20, p. 6; C 14, p. 8.
American and West Indian, C 17,
p. 17.
yellow fever, C 14, pp. 6, 7, 8; C 20,
p. 5.
- Moths in apiaries, C 13, p. 30.
- Motilla tree, R 1903, p. 438.
- Mountain plum, R 1904, p. 393; 1905, p. 41.
- Mountains of Porto Rico, C 15, p. 7; B 3,
p. 12; R 1901, p. 385.
- Mozambique, B 2, p. 18; B 23, p. 18; R
1902, p. 351.
- Múcaro, B 23, p. 18.
- Muck, fertilizing value, R 1925, p. 9.
- Mucuna pruriens*. (*See Pica pica.*)
- Mulberry—
insect pests, R 1903, p. 446; 1906,
p. 27.
white, R 1903, p. 441; 1905, p. 39.
- Mules—
and oxen, comparative value in haul-
ing, B 9, p. 37.
notes, B 29, p. 13; R 1901, p. 412;
1905, p. 18; 1907, p. 14; 1908, pp.
37, 38; 1909, p. 38; 1918, pp. 9, 22.
parasites, R 1928, p. 36.
- Mung bean culture, R 1916, p. 21; 1919,
pp. 10, 36; 1920, p. 38; 1922, p. 9.
- Muriate of potash affecting seed germina-
tion, R 1905, p. 10.
(*See also Potassium chloride.*)
- Murta, R 1904, p. 393.
- Musa paradisiaca*, notes, R 1915, p. 36.
(*See also Bananas.*)
- Musa textilis*. (*See Manila hemp.*)
- Muscles as affected by Tropics, R 1912,
p. 17.
- Musk. (*See specific kinds.*)
- Muskmelon—
at Rio Piedras, R 1902, p. 337.
- Muskmelon—Continued.
culture, B 7, p. 41; R 1907, p. 29;
1908, pp. 20, 22; 1919, pp. 25, 26;
1921, p. 21; 1922, p. 13; 1923, p.
11; 1924, p. 20; 1926, p. 24.
diseases, R 1920, p. 22; 1921, p. 21.
marketing, B 7, p. 42.
(*See also Cantaloupe.*)
- Mussanda philippica*, R 1918, p. 14.
- Mustard—
culture, B 7, p. 42; 1928, p. 10.
disease, R 1925, p. 30.
on calcareous soils, B 16, p. 11.
insect pests, R 1907, p. 35.
notes, R 1926, p. 8.
(*See also Chinese mustard.*)
- Mycoidea parasitica* on vanilla, R 1917,
p. 29.
- Mycosphaerella citrullina* on watermelons,
R 1925, p. 40.
- Myiarchus antillarum*. (*See Juif.*)
- Myrcia* sp., R 1903, p. 438.
- Myriangium*—
curtissii, R 1903, p. 458.
duriæ, R 1903, pp. 445, 458.
- Myriapods, B 23, p. 16.
- Myristica moschata*. (*See Nutmeg tree.*)
- Myrmelachista ambigua*, C 15, p. 14.
- Myrmelachista ambigua ramulorum*. (*See*
Ants on coffee.)
- Myrmelachista* sp., B 17, p. 25.
- Myrobalan, R 1905, p. 40; 1909, p. 22.
- Myrtle orange. (*See Orange.*)
- Myrtus tomentosus*. (*See Downy myrtle.*)
- Mytilaspis citricola*—
on citrus, R 1903, p. 445; 1904, p.
401.
parasites, R 1903, pp. 445, 457.
- Naphthaline, insecticidal value, C 17, pp.
19, 20; B 2, p. 15; R 1902, p. 350.
- Napier grass—
as forage crop, B 29, p. 10; R 1919,
p. 36; 1920, p. 12; 1921, pp. 3, 16;
1923, p. 2; 1924, p. 5; 1925, p. 3;
1926, p. 3.
feeding value, B 29, p. 12.
insect pests, R 1921, p. 23.
notes, R 1919, p. 12; 1920, p. 37;
1927, p. 6.
silage, R 1924, pp. 5, 6.
- Naranjo tree. (*See Oranges, sour.*)
- Narcissus culture at Rio Piedras, R 1902,
p. 337; 1903, p. 435.
- Naringin, R 1928, p. 27.
- Nassula elegans*, R 1912, p. 13.
- Nasturtiums, R 1923, p. 3; 1926, p. 10.
- Necator suillus* in swine, R 1927, pp. 28, 31;
1928, p. 38.
(*See also Hookworm.*)
- Nectandra* sp., R 1903, p. 438.
- Nectarine tree chlorosis in England, B 11,
p. 29.
- Nectria bainii* on cacao, R 1913, p. 27.
- Negroes in Porto Rico. (*See Population.*)
- Nematodes—
in domestic animals, R 1925, pp. 22,
23; 1927, pp. 27, 28.
in soils, C 12, p. 5.
in turkeys, R 1927, p. 27.
on tobacco, R 1907, pp. 17, 35.
on tomatoes, R 1921, p. 19.
on truck crops and flowers, R 1923, p.
14.
sulphur treatment, R 1925, p. 10; 1927,
p. 24.
- Neocosmospora* on beans, R 1903, p. 467.
- Nephettium glabrum*. (*See Litchi.*)
- Neurasthenia, R 1912, p. 17.
- Nicotiana tabacum*. (*See Tobacco.*)
- Nicotine sulphate insecticidal value, R 1923,
p. 13; 1926, p. 8.
- Níspero tree. (*See Sapodilla tree.*)
- Nitrate of soda—
effect on seed germination, R 1905, p.
10.
fertilizing value, B 31, pp. 14, 25.

- Nitrate of soda—Continued.
for rice, R 1917, p. 10.
importation, R 1928, p. 8.
- Nitrification in soils, C 11, p. 5.
- Nitrogen—
as fertilizer, C 6, pp. 7, 8.
economy in cane soils, R 1919, pp. 13,
14; 1920, p. 14; 1921, p. 9; 1922,
p. 4; 1923, p. 3; 1924, p. 8; 1925,
p. 5; 1926, p. 10; 1927, pp. 1, 8;
1928, p. 12.
fertilizer for pineapples, R 1927, p. 23.
importation, R 1922, p. 1.
in bananas, R 1927, p. 7.
in grass, C 6, p. 5.
in guanos, B 25, p. 47; R 1911, p. 16.
in soils, C 12, p. 9; R 1909, pp. 16, 17.
sources, C 6, pp. 7, 8; C 11, p. 5; B 7,
p. 11; B 13, pp. 8, 23; B 19, p. 10;
R 1905, pp. 15, 17; 1908, p. 31;
1912, pp. 8, 16; 1914, p. 8; 1915,
p. 10; 1916, p. 6; 1917, p. 6; 1918,
p. 23; 1919, p. 8; 1922, p. 1; 1924,
p. 7; 1925, p. 3; 1927, p. 1.
- Nodular worms. (See *Esophagostomum*
spp.)
- Nodule-forming plants, R 1911, p. 38.
- Noropsis hieroglyphica*, R 1917, p. 33.
- Nostocaceæ. (See *Cyanophyceæ*.)
- Nuez. (See Candlenut.)
- Nuezmoscada. (See *Nectandra* sp.)
- Nuezmoscada cimarrona fungus disease, B
28, p. 7.
- Nutmeg tree, R 1903, p. 440; 1905, p. 40.
- Nutrients—
absorption by plants, R 1916, p. 15;
1917, p. 10.
in soils. (See Soils, mineral nutrients.)
- Nuts—
notes, R 1904, p. 393; 1907, p. 28.
(See also specific kinds.)
- Oats—
carbon bisulphide effect on, C 11, p. 8.
culture, R 1902, pp. 337, 341; 1917,
p. 35.
feeding value, R 1909, p. 42; 1913,
p. 33.
moon effect on, R 1922, p. 2.
lime-magnesia ratio, C 10, p. 3; B 12,
p. 9.
on acid soil, B 13, p. 8.
on calcareous soils, B 16, p. 11.
- Ocean depth off north coast of Porto Rico,
R 1901, p. 385.
- Ochroma lagopus*. (See Guano tree.)
- Odontodonia speciosa*, fungus disease, R
1925, p. 29.
- Esophagostomum*—
columbianum in goats, R 1927, p. 27.
dentatum in swine, R 1925, p. 23;
1927, p. 27.
longicaudum in swine, R 1927, p. 27.
radiatum in cattle, R 1925, p. 23;
1927, p. 27.
venulosum in goats, R 1927, p. 28.
- Offal as chicken feed, C 19, p. 21.
- Oidium* sp.—
on beans, R 1925, p. 36.
on grapes, R 1925, p. 38.
on roses, R 1925, p. 39.
- Oil—
Aleurites. (See Chinese wood-oil con-
stants.)
avocado. (See Avocados.)
bearing trees, R 1927, p. 2.
cake as poultry feed, R 1909, p. 40.
candlenut. (See Candlenut.)
damage to trees, C 17, p. 9.
emulsion formulas, C 17, pp. 11, 19;
B 10, pp. 28, 29, 33.
fish, C 17, pp. 13, 19; B 10, p. 27.
for mosquito control, C 14, pp. 8,
22; C 20, p. 10.
menhaden, B 10, p. 32.
miscible, C 17, p. 12; B 10, pp. 24-27;
R 1908, p. 23; 1909, p. 24.
of cloves, B 26, p. 4.
of tar mixtures, C 17, p. 19.
- Oil—Continued.
of turpentine, insecticidal value, C 17,
p. 20.
paraffin, formula, C 17, p. 11; R 1916,
p. 27; 1920, p. 24.
pine-tar, insecticidal value, R 1928,
p. 17.
resin, C 4, p. 2; B 10, pp. 27, 32.
use on cattle, C 17, p. 19.
- Okra—
culture, B 7, p. 42; R 1902, p. 337;
1912, p. 27; 1915, p. 27; 1917, p.
35; 1920, p. 21; 1922, p. 2; 1923,
p. 3; 1926, p. 8.
diseases, R 1917, p. 29; 1925, p. 38.
insect pests, R 1915, p. 42.
marketing, B 7, p. 43.
seed deterioration, B 20, pp. 6, 15, 28.
- Oleanders, insect pests, R 1915, p. 45.
- Oliarus cinereus*, R 1921, p. 24.
- Omphalia flavidia* on coffee, R 1925, p. 37.
- Onchocerca* sp.—
in cattle, R 1927, p. 28.
in mules, R 1928, p. 36.
- Oncoba echinata*, R 1927, p. 13.
- Onions—
culture, B 7, p. 43; R 1902, p. 337;
1907, p. 29; 1908, p. 20; 1920, p.
23; 1922, p. 2; 1923, p. 18; 1926,
p. 9; 1928, p. 10.
diseases, B 7, p. 45; R 1925, pp. 30,
38.
effect of carbon bisulphide, C 11, p. 8.
insect pests, B 7, p. 45.
marketing, B 7, pp. 9, 45.
photoperiodism, R 1924, p. 10; 1926,
p. 14; 1927, p. 11.
- Ophiocetria coccicola*. (See White-headed
fungus.)
- Opius (Utetes) anastrephae*, R 1912, p. 36.
- Opuntia* spp.—
as source of honey, B 15, p. 15.
notes, R 1904, p. 393.
- Orange—
leaf weevil. (See *Diaprepes speng-
leri*.)
myrtle, R 1903, p. 441.
root, B 13, p. 18.
tree for reforestation, R 1927, p. 2.
- Oranges—
as source of honey, C 13, p. 27; B
15, p. 13; R 1908, p. 27; 1911,
p. 33.
Bergamot, R 1903, p. 441.
bittersweet, R 1903, p. 441.
commercial plantings, B 33, p. 2.
culture, C 6, p. 15; B 4, pp. 7-21; R
1901, p. 407; 1905, p. 24; 1906,
p. 21; 1909, p. 19; 1910, p. 26;
1911, p. 24; 1912, pp. 24, 25.
culture in Cuba, R 1910, p. 34.
diseases, C 17, p. 26; B 17, p. 9; B
33, p. 30; R 1901, pp. 408, 415;
1905, pp. 23, 28; 1906, p. 25.
fertilization, B 18; R 1906, p. 22;
1912, p. 24.
growing districts, B 3, pp. 25, 30, 40.
identifying budding stock, B 33, p. 10.
industry, B 33, pp. 3, 4; R 1903, p.
455; 1908, p. 17; 1910, p. 10; 1913,
p. 8; 1918, p. 7; 1920, pp. 9, 10,
28-32.
insect pests in Cuba, R 1910, p. 34.
insect pests in Porto Rico, C 4; B 2,
p. 9; B 10; R 1901, p. 408; 1903,
pp. 445, 446, 456, 459; 1904, pp.
388, 396; 1905, p. 28; 1906, pp.
25, 26; 1907, pp. 31, 38; 1908, pp.
23, 24, 25; 1909, p. 24; 1912, p.
35; 1914, pp. 34, 35; 1920, pp. 23,
24.
intercropped with coffee, B 3, p. 47;
B 13, p. 17; R 1912, p. 23.
juice preservation, R 1917, p. 6; 1918,
p. 6.
Mandarin, R 1903, p. 441.

- Oranges—Continued.
 marketing, shipping, storing, C 8; B 4, pp. 21-24; R 1910, p. 25; 1912, p. 23; 1920, pp. 33-36; 1923, p. 17.
 native, B 33, p. 2.
 packing method chart, B 4, p. 23.
 scab, R 1903, p. 456.
 sour, B 4, p. 8; R 1903, p. 441; 1913, p. 17; 1928, p. 27.
 sweet, B 4, p. 9; R 1903, p. 441; 1928, p. 28.
- Orchard grass—
 insect pests, R 1921, p. 23.
 on calcareous soil, B 16, p. 10.
- Orchids on coffee, R 1903, p. 448.
- Organic compounds in soils, C 11, pp. 3, 6.
- Ornamentals, R 1919, p. 10.
- Ornithodoros meginini* in cattle and goats, R 1927, p. 28.
- Orthozia* sp., on coffee, R 1903, p. 444.
- Orthoptera, B 23, p. 4; R 1902, p. 346.
- Oryza sativa*. (See Rice.)
- Osteoporosis in horses, R 1910, p. 42; 1911, p. 40.
- Ostertagia ostertagi* in cattle, R 1927, p. 27.
- Otahite—
 apple. (See Tahiti apple.)
 gooseberry culture, R 1903, p. 441; 1905, p. 40; 1907, p. 23; 1908, p. 22; 1909, p. 21.
 gooseberry, insect pests, R 1914, p. 31.
- Otiorhynchidae on coffee and higüerillo, R 1906, p. 31.
- Ox warble fly on cattle, R 1925, p. 23; 1927, p. 28.
- Oxandra* sp., R 1903, p. 438.
- Oxen—
 and mules, comparative value in hauling. (See Mules.)
 breeding, R 1911, p. 41; 1912, p. 40.
 lameness, R 1925, p. 24.
 notes, R 1918, p. 9.
 parasites, R 1928, p. 37.
- Oxidase in pineapple plant, B 11, p. 40; R 1927, p. 22.
- Oxidases, killing temperature, R 1907, p. 46.
- Oxidizing enzymes in cacao seed. (See Cacao curing and fermentation.)
- Oxyechus vociferus rubidus*. (See Platero.)
- Oyster-shell scale—
 of the North, B 10, p. 13.
 of the Tropics. (See Purple scale.)
- Pachyrhizus tuberosus*. (See Yam bean.)
- Packing houses for fruit, C 8, p. 8; B 8, p. 30; R 1918, p. 16.
- Paint—
 for girdling trees, C 4, p. 1; R 1904, p. 388.
 from lumbang oil, R 1927, p. 3.
- Pajaro bobo, B 23, p. 18.
- Pajull. (See Cashew apple.)
- Pal injector, C 11, pp. 10, 13.
- Palicourea* spp. diseases, B 17, p. 17.
- Palma—
 de cogollo, R 1914, p. 11.
 de Sierra. (See *Acrista monticola*.)
 real. (See Royal palm.)
- Palms, ornamental, insect pests, R 1915, p. 44.
- Palo—
 blanco as source of honey, C 13, p. 28; B 15, p. 12.
 de cucubano fungus disease, B 28, p. 7.
 de hueso fungus disease, B 28, p. 7.
 de hueso insect pests, R 1914, p. 31.
 de Maria for reforestation, R 1924, pp. 6, 7; 1925, p. 3.
 de poilo tree, R 1903, p. 438.
- Panama—
 hat palm. (See *Cardulovica* spp.)
 wilt disease. (See Bananas, wilt.)
- Panax plumatum* disease, B 17, p. 17.
- Panicum—
 barbinode. (See Para grass.)
 maximum. (See Guinea grass.)
- Pansies, R 1905, p. 18.
- Papayas—
 culture, R 1903, p. 433; 1904, p. 394; 1905, p. 36; 1910, p. 29; 1920, p. 19; 1921, p. 22; 1924, p. 21.
 diseases, R 1903, p. 467; 1925, p. 29.
 growing districts, B 3, p. 19.
 insect pests, R 1903, pp. 446, 467; 1906, p. 27.
- Paper—
 for wrapping fruit, C 8, p. 15; B 8, p. 32; B 24, p. 25.
 tarred, for roofing, B 29, p. 13.
 tarred, insecticidal value, C 17, p. 20.
 waterproof, use in grafting, B 24, p. 11.
- Papilio* sp., on oranges, B 10, p. 10; R 1907, p. 31.
- Para grass—
 as forage crop, R 1905, p. 14; 1906, p. 14; 1907, p. 12; 1908, p. 14; 1926, p. 3.
 feeding value, B 29, p. 12.
 insect pests, R 1921, p. 23.
 notes, B 29, p. 10; R 1902, p. 337.
 silage, B 29, p. 13; R 1908, p. 38; 1909, p. 41; 1911, pp. 43, 44; 1924, pp. 5, 6.
- Paradichlorobenzene—
 as anthelmintic, R 1925, pp. 22, 23; 1926, p. 30.
 as soil disinfectant, R 1923, p. 15.
 insecticidal value, R 1928, p. 17.
- Paraffin—
 oil. (See Oil.)
 use in making tape, B 4, p. 12.
 use in sealing fruits, R 1906, p. 20; 1920, p. 36; 1923, p. 17.
- Paraguay tea, introduction, R 1923, p. 6.
- Paramphistomum cervi* in cattle, R 1927, p. 28.
- Parasites of plants, R 1903, p. 448.
- Parasitology of domestic animals, R 1925, p. 22; 1926, pp. 2, 30; 1927, pp. 2, 27-31; 1928, p. 36.
- Parents' meetings, R 1917, p. 38.
- Paris green—
 burning of foliage, C 17, p. 5.
 insecticidal value, C 17, pp. 4, 5, 23; B 2, p. 16; B 7, p. 18; B 23, p. 23; R 1903, pp. 443, 463; 1907, pp. 34, 36.
- Paritium tiliaceum*. (See Emajagua.)
- Parkia*—
africana, R 1904, p. 395.
rowbroughii, R 1904, p. 395.
- Parmentiera cereifera*. (See Apple calabash.)
- Parsley culture, B 7, p. 46; R 1902, p. 337; 1928, p. 10.
- Parsnips culture, B 7, p. 46; R 1902, p. 337.
- Partridge pea—
 as cover crop, B 19, p. 24.
 as source of honey, B 15, p. 14.
- Paspalum*—
dilatatum as forage crop, R 1911, p. 44; 1912, p. 43.
 sp., notes, B 23, p. 7.
 (See also Grama grass.)
- Passiflora*—
edulis, R 1903, p. 435.
quadangularis. (See Granadillo.)
- Pavonia as windbreak, R 1909, p. 32; 1910, p. 37.
- Peach tree—
 chlorosis in England, B 11, p. 29.
 culture, R 1905, p. 40; 1906, p. 24; 1909, p. 20; 1910, p. 28.
 diseases, R 1905, p. 40.
 insect pests, R 1903, p. 446; 1906, p. 27.
- Peanuts—
 culture, R 1902, p. 337; 1905, p. 17; 1908, p. 21; 1920, pp. 20, 22.
 diseases, R 1903, p. 449; 1917, p. 29; 1925, p. 38.
 for soil renovation, R 1914, p. 9; 1916, p. 7; 1917, p. 21.
 notes, R 1918, p. 22.

- Pear tree chlorosis, B 11, p. 29.
 Pears, culture, R 1905, p. 40; 1909, p. 20; 1910, p. 28.
Peas—
 as affected by citric acid, R 1908, p. 41.
 as chicken feed, C 19, p. 21.
 culture, B 7, p. 46; R 1902, pp. 337, 339; 1922, p. 2; 1923, p. 3; 1924, p. 6; 1925, p. 4; 1926, p. 9; 1928, p. 10.
 for soil renovation, C 6, p. 7; R 1916, p. 7.
 importation, R 1916, p. 9.
 marketing, B 7, p. 47.
 on calcareous soil, B 16, p. 11.
 yield affected by carbon bisulphide, C 11, p. 8.
Pecans, R 1907, p. 28.
Pectin fermentation, C 11, p. 5.
Pellicularia—
koleroga host plants, B 17, p. 9.
koleroga on coffee, B 17, p. 8; R 1910, p. 35; 1914, p. 28.
 sp. on mangosteen, R 1915, p. 35.
Penicillium—
digitatum on citrus, B 33, p. 30.
italicum on citrus, B 33, p. 30.
Pennisetum—
longistylum. (See Kikuyu grass.)
merkeri. (See Merker grass.)
purpureum. (See Napier grass.)
 Pentoses in pineapple leaves, R 1927, p. 22.
 Peons in Porto Rico. (See Labor problems; Laborers.)
Peppers—
 culture, B 7, p. 47; R 1912, p. 27; 1920, p. 21.
 diseases, R 1925, p. 38; 1928, p. 33.
 insect pests, R 1907, p. 36; 1923, p. 14.
 marketing, B 7, p. 48.
 notes, R 1902, p. 337; 1922, p. 2; 1923, p. 3; 1926, pp. 8, 9.
 seed deterioration, B 20, pp. 6, 9, 29.
Periconia—
pyrenophora on rautias, B 6, p. 22; R 1904, p. 398.
 sp. on edible canna, R 1904, p. 398.
Perkinsiella saccharicida on cane, B 15, p. 15.
Permanganate—
 effect on lilies. (See Lilies.)
 method for determining iron in plants, R 1914, p. 13.
Peronoplasmopara cubensis—
 on cantaloupe, R 1925, p. 36.
 on cucumber, R 1925, p. 37.
Peronospora—
parasitica on cabbage, B 7, p. 27.
schleidneriana on onions, B 7, p. 45.
trichotoma, B 6, p. 23; R 1904, p. 398.
 Peroxidase in pineapple plants, B 11, pp. 40, 41; R 1927, p. 22.
Persea gratissima. (See Avocados.)
 Persian insect powder. (See Pyrethrum.)
Persimmons—
 curing, R 1907, p. 47.
 Japanese culture, R 1905, p. 37; 1909, p. 21; 1910, p. 28.
Pestalozzia guepini on mangoes, R 1925, p. 38.
Petipuá. (See Peas.)
Petit pois. (See Peas.)
Petiveria alliacea. (See Anamú.)
 Petroleum emulsion, insecticidal value, B 10, p. 29; R 1908, p. 25.
Petunias, R 1923, p. 3; 1926, p. 10.
Phaseolus—
adenanthus. (See Habichuela cimarrona.)
mungo. (See Mung bean.)
semirectus. (See Habichuela parada.)
 sp., as forage crop, R 1905, p. 16.
Phasmidae, R 1902, p. 346.
 Pheasants, introduction, R 1928, p. 12.
- Phenogams as affected by sodium fluoride, C 10, p. 7.
 Phenol mixture, insecticidal value, C 17, p. 20.
Phlebotenia cowellii. (See Violet tree.)
Phlox, R 1923, p. 3; 1926, p. 10.
Phomopsis vexans on eggplant, R 1925, p. 37.
Phoradendron, R 1903, p. 448.
 Phosphate deposits, R 1917, p. 6.
 Phosphates, efficiency in soils, R 1916, p. 12; 1917, p. 9; 1919, p. 14.
 (See also Soils, sulfification.)
Phosphoric acid—
 in grass, C 6, p. 5.
 in guano, B 14, p. 12; B 25, p. 21; R 1911, p. 16.
Phosphorus—
 cost in Porto Rico, C 6, p. 7.
 fertilizing value for pineapples, R 1927, p. 24.
 for crab control, C 17, p. 29.
 in bananas, R 1927, p. 7.
 sources, C 6, p. 9; B 7, p. 12.
 Photoperiodism studies, R 1922, p. 5; 1923, p. 5; 1924, p. 10; 1925, p. 11; 1926, p. 14; 1927, p. 11; 1928, p. 17.
Phycomycete—
 on beans, R 1917, pp. 28, 35.
 on hibiscus, R 1925, p. 38.
Phyllanthus—
disticha. (See Otaheite gooseberry.)
emblica. (See Myrobalan.)
Phyllophaga—
 spp., notes, R 1926, p. 6.
 (See also May beetle.)
Phyllosticta—
malkoffii on cotton, R 1925, p. 37.
nicotiana on tobacco, R 1925, p. 39.
sacchari on cane, R 1925, p. 36.
Phylloxera spp., C 11, p. 7; B 11, p. 29; R 1906, p. 23.
 Physiography of Porto Rico, B 3, p. 12.
Physopelta vitis on grapes, R 1925, p. 38.
Phytophthora—
cactorum. (See Phytophthoras, tropical.)
cinnamomi, R 1928, p. 29.
citrophthora, R 1928, p. 33.
faberi, notes, R 1913, p. 28.
 (See also Coconut bud rot.)
hibernalis, R 1928, p. 33.
infestans—
 on potatoes, R 1917, p. 29.
 on tomatoes, B 7, p. 55; R 1917, p. 29; 1925, p. 39.
palmivora—
 on coconuts. (See Coconut bud rot.)
 on cotton, R 1925, p. 37.
 on hat palm, R 1926, p. 29.
 sexual spores, R 1927, p. 25.
parasitica. (See Phytophthoras, tropical.)
phaseoli on beans, B 7, p. 24.
 Phytophthoras, tropical, R 1925, p. 29; 1926, p. 30; 1927, p. 25; 1928, p. 33.
Pica pica, B 19, p. 17; R 1903, p. 434.
Pickling. (See Cucumber.)
Picramnia pentandra. (See Palo de hueso.)
Pigeon pea—
 acreage, R 1918, p. 21; 1919, p. 33.
 analysis, B 19, p. 20.
 as cattle feed, B 29, p. 11.
 as cover crop, B 19, p. 20; R 1910, pp. 26, 27; 1911, p. 25; 1912, p. 8; 1913, pp. 19, 29; 1914, p. 21; 1924, p. 7; 1925, p. 9.
 as forage crop, R 1906, p. 14.
 as shade for coffee, R 1911, p. 30.
 as windbreak, B 10, p. 18; B 33, p. 19; R 1905, p. 25; 1907, p. 33; 1920, p. 25.
 culture, B 7, p. 46; R 1918, p. 14; 1919, p. 10; 1920, p. 15.
 diseases, R 1925, pp. 30, 31, 32, 38, 39; 1926, p. 30.

- Pigeon pea—Continued.
growing districts, B 3, pp. 19, 23, 24,
40.
insect pests, R 1912, p. 34; 1915, p.
44.
- Pigs. (*See Swine.*)
- Pineapple—
eyes, arrangement, R 1927, p. 20.
plant structure, B 8, p. 7; R 1927, pp.
19, 20.
plant, outward appearances, studies, R
1927, p. 19; 1928, p. 25.
plant, sun effects, B 8, p. 41.
slips, fumigation, B 11, p. 21; R 1906,
p. 20; 1907, p. 37; 1908, p. 26; 1911,
p. 24.
soils in other countries, B 11, p. 18.
soils in Porto Rico, B 8, p. 10; R
1924, p. 25; 1925, pp. 7, 8.
stem scar drying, R 1928, p. 27.
- Pineapples—
acidity determination, R 1928, p. 26.
canning, B 8, p. 36; R 1918, p. 6.
catalase. (*See Catalase.*)
chlorosis, B 11; B 16, pp. 14, 33; R
1909, p. 30; 1910, p. 20; 1911, p.
22; 1913, p. 14.
cover crops, B 19, p. 28; R 1911, p. 25;
1913, p. 19; 1925, p. 9.
culture, B 8, pp. 13-18, 25-29; R
1904, p. 402; 1905, p. 30; 1906,
p. 18; 1907, p. 27; 1911, p. 24;
1914, p. 21; 1915, p. 28; 1924,
p. 24; 1928, p. 25.
curing, grading, sizing, B 8, p. 31.
diseases, B 8, pp. 38-41; R 1906, p.
27; 1907, p. 37; 1908, p. 35;
1910, p. 36; 1928, p. 26.
fertilization, C 6, p. 16; B 8, p. 18;
R 1908, p. 21; 1916, p. 17; 1924,
p. 25; 1925, p. 10; 1927, p. 23.
industry, B 3, p. 49; B 8, p. 37; R
1901, p. 410; 1906, pp. 6, 7; 1907,
p. 27; 1908, p. 17; 1910, p. 10;
1913, p. 8; 1917, p. 36; 1920, pp.
28-32; 1922, p. 15; 1925, p. 7;
1928, p. 25.
insect pests, C 7; B 8, p. 38; R 1906,
p. 27; 1907, p. 37; 1908, p. 26;
1911, p. 25; 1912, p. 36; 1918, p. 17.
marketing and shipping, B 8, pp.
29-36; R 1905, p. 31; 1906, p. 19;
1907, pp. 27, 28; 1909, pp. 7, 11;
1920, p. 28.
maturity changes, R 1923, p. 17; 1928,
pp. 25, 26.
notes, B 3, p. 19; R 1903, pp. 442,
455; 1926, p. 26; 1927, p. 1.
photoperiodism, R 1926, p. 14; 1927,
p. 11; 1928, p. 17.
propagation, B 8, p. 8.
sap reaction. (*See Sap.*)
transpiration, R 1925, p. 7.
varieties, B 8, p. 24; R 1901, p. 410;
1903, p. 425; 1904, p. 402.
- Pink scale. (*See Coccus sp.*)
- Pinus pinaster.* (*See Maritime pine.*)
- Pinworms in mules, R 1928, p. 36.
- "Piojo." (*See West Indian peach scale.*)
- Pipe systems, R 1915, p. 34.
- Piper* spp. disease, B 17, p. 17.
- Piptadenia peregrina.* (*See Cojoba tree.*)
- Piricularia oryzae* on rice, R 1917, p. 30.
- Pisé de terre. (*See Rammed earth.*)
- Pistachio tree, R 1903, p. 441.
- Pistachio tree, wild. R 1903, p. 441.
- Pistacia*—
mutica. (*See Pistachio tree, wild.*)
vera. (*See Pistachio tree.*)
- Pithecellobium*—
dulce as coffee shade, R 1910, p. 40.
saman. (*See Saman.*)
sp., R 1909, p. 13; 1911, p. 25.
- Pitirre attacking changa, B 23, p. 18.
- Planorbis quadclouensis*, R 1928, p. 36.
- Plant—
acquisition and distribution, R 1903,
p. 442; 1904, p. 388; 1906, p. 24;
1909, pp. 13, 23; 1917, p. 38; 1920,
pp. 11, 19.
ash, iron determination, R 1914, p. 13.
disease survey, R 1916, p. 29.
diseases, C 17, pp. 24, 27; R 1903, p.
467.
growth on calcareous soil. (*See Soils,*
calcareous.)
lice, R 1902, p. 343; 1903, pp. 444,
448; 1907, p. 36; 1923, p. 13.
nutrition, R 1909, p. 31; 1919, p. 15;
1928, p. 28.
quarantine. (*See Quarantining.*)
respiration, C 11, p. 3.
roots, wrapping for insect control, B 2,
p. 12.
tolerance to soil acidity, R 1919, p. 13.
- Plantain—
by-products, R 1905, p. 22.
cultivation, B 3, p. 48.
notes, B 3, pp. 18, 19, 21, 24, 25, 31,
33, 34, 40; R 1918, p. 22.
wild, B 6, p. 10.
(*See also Bananas.*)
- Planting seasons as influenced by the moon, R 1922, p. 2.
- Plants, economic, of Porto Rico, B 19,
p. 17.
- Plasmodiphora brassicæ* on cabbage, B 7,
p. 27.
- Plasmopara cubensis*—
on cucumbers, B 7, p. 35.
on melons, R 1917, p. 29.
- Platynosomum fastosum* in the cat, R 1927,
p. 27.
- Playa plain, B 3, p. 13; R 1901, p. 385;
1902, p. 332.
- Playero, B 23, p. 18.
- Plectridia, C 11, p. 6.
- Plectus, B 13, p. 15.
- Pleuromonas in soils, R 1912, p. 13.
- Plum tree chlorosis in England, B 11, p. 29.
- Plums—
culture, R 1905, p. 40; 1909, p. 20;
1910, p. 28.
insect pests, R 1906, p. 27.
(*See also specific kinds.*)
- Plutella maculipennis.* (*See Diamond-backed*
cabbage moth.)
- Podocarpus chinensis* root nodule study, R 1911, p. 38.
- Psaciliu vivipara* for mosquito control, C 14, p. 7.
- Poinciâna regia.* (*See Flamboyán tree.*)
- Poinsettias, photoperiodism, R 1924, p. 11.
- Poisons, insecticidal value, C 17, p. 4.
- Pokkah boeng disease of sugarcane, R 1928, p. 33.
- Pollination by bees. (*See Bees.*)
- Polygonum acre.* (*See Blackheart* as
source of honey.)
- Polyporus on coffee, R 1903, p. 449.
- Polysaccharide in pineapple leaves, R 1927, p. 22.
- Polytrias præmorsa.* (*See Java grass.*)
- Pomarosa—
as source of honey, C 13, p. 29; B 15,
p. 13.
diseases, B 17, p. 17.
insect pests, R 1912, p. 35; 1917,
p. 34.
tree, notes, C 12, p. 22; B 13, p. 18;
B 18, p. 18; B 23, p. 20; R 1904,
p. 388; 1905, p. 37; 1907, p. 23.
- Pomelo. (*See Grapefruit.*)
- Pond apple culture, R 1903, p. 441; 1905,
p. 35.
- Pontia monuste* on cabbage, R 1912, p. 34.
- Pop corn characteristics, C 18, p. 5.
- Population of Porto Rico, B 3, pp. 8, 9, 50;
R 1914, p. 7; 1915, p. 9; 1916, p. 5;
1918, p. 9; 1920, p. 12; 1921, p. 1.
- Pork importation, R 1920, p. 7.

Porto Rico—

agriculture. (*See Agriculture.*)
area and boundaries, B 3, p. 7; B 15,
p. 5; R 1901, p. 383; 1915, p. 7.
climate. (*See Climate.*)
configuration, R 1901, p. 384.
exploitation, B 9, p. 21.
exports and imports, R 1907, p. 7;
1908, p. 7; 1910, p. 7; 1911, p. 9;
1912, p. 7; 1913, p. 7; 1920, p. 5;
1921, p. 1.
(*See also specific kinds.*)

geology. (*See Geology.*)
hat palm. (*See Inodes causiaram.*)
Horticultural News, R 1908, p. 17.
houses. (*See Houses and huts.*)
labor problems. (*See Labor.*)
land title registration. (*See Rural credits.*)
land valuation and taxation, R 1901,
p. 392.
(*See also Rural credits.*)
location, C 15, p. 7; B 3, p. 7; B 15,
p. 5; R 1901, p. 383.
notes, R 1905, p. 7; 1906, p. 5; 1907,
pp. 7, 20; 1909, p. 8; 1910, p. 7;
1912, p. 7; 1913, p. 10; 1914, p. 7;
1919, p. 6; 1920, p. 12; 1921, p. 1;
1924, p. 1.
observations by F. S. Earle, R 1903,
p. 454.

physiography. (*See Physiography.*)
population. (*See Population.*)
report by S. A. Knapp. (*See Knapp.*)
sanitary conditions, R 1901, p. 389.
settlement, B 3, p. 8.
transportation, C 15, p. 7; B 3, p. 52;
R 1901, p. 391.

Posthormostomum commutatum in chickens, R 1927, p. 27.

Potash—

caustic, as insecticide, C 17, p. 13;
B 10, p. 27.
cost in Porto Rico, C 6, p. 7; B 10,
p. 32.
for pineapples, R 1927, p. 23.
in bananas, R 1927, p. 7.
in grass and in tobacco stalks, C 6,
p. 5.
sources, C 6, p. 9; B 7, p. 12; R 1915,
p. 10.

Potassium—

alum, effect on cacao beans, R 1926,
p. 7.
chloride—
importation, R 1928, p. 8.
in sea water, R 1915, pp. 10, 11.
cyanide mixture as plant fumigant,
C 17, p. 22.
iodide for osteoporosis, R 1910, p. 42.
oxalate effect on algae, C 10, p. 6.
permanganate—
as soil disinfectant, R 1910, pp.
17, 18.
for sorehead in chickens, R 1912,
p. 42.

Potatoes—

carbon bisulphide effects, C 11, p. 8.
culture, R 1902, pp. 337, 339; 1903,
p. 424; 1918, pp. 20, 22; 1919, p.
26; 1920, pp. 20, 22.
diseases, R 1903, p. 450; 1917, p. 29.
food value, B 6, p. 23.
growth in Tropics, R 1928, p. 10.
importation, R 1901, p. 411.
on acid soil, B 13, p. 8.
photoperiodism, R 1927, p. 11.
shipping, R 1905, p. 14.

Poultry—

diseases and ailments, R 1909, p. 39;
1912, p. 42.
parasites, R 1925, p. 23; 1926, p. 30;
1927, pp. 27, 29; 1928, p. 36.

Poultry—Continued.

raising, C 19; R 1905, p. 19; 1907,
p. 15; 1908, p. 16; 1909, pp. 39,
40; 1910, p. 44; 1911, p. 43; 1912,
p. 42; 1913, p. 33; 1914, p. 10;
1918, pp. 9, 22; 1921, p. 4; 1923,
p. 2.

(*See also specific kinds.*)

Preservatives in milk, B 29, p. 15.

Prosopis juliflora. (*See Algarrobo.*)

Prosthognathus sp., in ducks, R 1926, p.
30; 1927, p. 27.

Protein—

in cacao, R 1907, p. 47.
in feeds, R 1909, pp. 39, 40, 42.
in pineapple leaves, R 1927, p. 22.
need of hens, C 19, p. 21.

Proteus vulgaris—

carbon bisulphide effects, C 11, p. 5.
notes, R 1909, p. 16.

Protoparce carolina on tobacco and to-
mato, R 1903, p. 448.

Protozoa—

in cattle, R 1927, p. 28.
in Porto Rico soils, R 1912, p. 13.
relation to soil sickness, R 1910, p. 15.
test for, R 1910, p. 15.

Prunus occidentalis. (*See Almendrón.*)

Pseudoaonidia articulatas on citrus, R 1908,
p. 25.

Pseudococcus—

citri. (*See Mealy bugs on pineapples.*)

sacchari. (*See Mealy bugs on cane.*)

Pseudomonas campestris. (*See Cabbage bacterial black rot.*)

Psidium—

cattleyanum. (*See Guava, cattley.)*
friedrichsthalianum, R 1905, p. 41.
guajava. (*See Guava.)*
guayaba. (*See Guava.)*
guayava. (*See Guava, cabada.)*
guineense. (*See Guava, Guinea.)*
lucidum. (*See Guava, Chinese.)*
molle, R 1905, p. 41.
pomiferum. (*See Guava, Calcutta apple.)*

Psoroptes communis on horses, R 1926, p.
31; 1927, pp. 27, 30.

Psoros, R 1905, p. 28.

Psychonotua sp., on crops, R 1912, p. 35.

Pteromalus calandrae parasitic on rice weev-
il, R 1904, p. 396.

Puccinia—

asparagi on asparagus, B 7, p. 22.

purpurea on sorghum, R 1925, p. 39.

Pucciniopsis caricae on papayas, R 1903, p.
467.

Puerta de Tierra, notes, C 14, p. 11.

Pulvinaria psidii on coffee and oranges,
R 1907, p. 38.

Pumpkins—

as forage crop, R 1912, p. 43.
cultural directions, B 7, p. 48.
Purple scale—
life history, B 10, p. 13; R 1908, p.
23.
on citrus, B 10, p. 13; B 33, pp. 23,
31; R 1901, p. 415; 1905, p. 27;
1906, p. 26; 1907, p. 32; 1909, p. 24.
(*See also Mytilaspis citricola.*)

Putilla, B 23, p. 18.

Pyralid on melons and squash, R 1903, p.
448.

Pyrethrum, insecticidal value, C 17, p. 17.

Pyrophorus luminosus larvæ, B 23, p. 17.

Pythium debaryanum on beans, R 1925, p.
36.

Quar as cover crop, R 1910, p. 26.

Quarantine plants, C 17, p. 28; R 1918,
p. 17.

Quebracho trees. (*See Schinopsis lorent-
zii.*)

Quenepa tree. (*See Spanish lime.*)

Quercus—

cornea. (*See Chinese oak.*)

pedunculata on calcareous soil, B 16,
p. 10.

- Quicklime—**
effect on cane seed, R 1926, p. 25.
for soil sterilization, C 17, p. 26.
(*See also Lime.*)
- Guitarán tree.** (*See Colubrina ferruginea.*)
- Radish—**
culture, B 7, p. 48; R 1902, pp. 337, 339; 1903, p. 424; 1920, p. 22; 1922, p. 2; 1926, p. 9.
marketing, B 7, p. 49.
moon effects, R 1922, p. 2.
on calcareous soil, B 16, p. 22; R 1913, p. 14.
photoperiodism, R 1924, p. 11.
seed deterioration, B 20, pp. 6, 9, 28, 29.
- Railroad transportation.** (*See Porto Rico transportation.*)
- Rainfall—**
at Adjuntas, B 3, p. 12.
at Arecibo, B 3, p. 12.
at Caguas, B 5, p. 35.
at Cayey, B 5, p. 35.
at Hacienda Amistad, R 1901, p. 388; 1902, p. 357.
at Hacienda Perla, R 1901, p. 388; 1902, p. 356; 1903, p. 426.
at Isabela, B 5, p. 35.
at Mayaguez, C 12, p. 9; R 1901, p. 388; 1902, p. 357; 1903, p. 426; 1910, p. 41; 1927, p. 5.
at Ponce, B 3, p. 12.
at San Juan, R 1901, p. 388; 1902, p. 356; 1903, p. 426.
at San Lorenzo, B 5, p. 35.
at Utuado, B 3, p. 12; B 5, p. 35.
at Yauco, B 5, p. 35; R 1903, p. 426.
notes, R 1901, p. 388; 1902, pp. 353, 355.
- Rain-tree.** (*See Saman.*)
- Rains—**
effect on insects, B 2, p. 11.
effect on plants and seed, B 7, p. 9.
- Ramie.** R 1904, p. 395; 1905, p. 22; 1906, p. 15; 1910, p. 12.
- Rammed earth** as building material, R 1927, p. 5.
- Ramularia—**
areola on cotton, R 1903, p. 465; 1925, p. 37.
coleosporii, R 1903, p. 449.
- Rape** as forage crop, R 1911, p. 44.
- Rat poisons.** C 17, p. 29.
- Rats attacking—**
coffee, R 1914, p. 24.
grapefruit, R 1923, p. 14.
poultry, R 1909, p. 39; 1928, p. 12.
sweetpotatoes, R 1912, p. 26.
watermelons, R 1902, p. 340.
- Red-fruited fungus.** (*See Red-headed fungus.*)
- Red-headed fungus—**
on Florida red scale, B 10, p. 15.
on purple scale, B 33, p. 23; R 1903, pp. 445, 457.
- Reducetase of pineapple leaves.** R 1927, p. 23.
- Reforestation.** B 1, p. 11; R 1901, p. 412; 1902, p. 355; 1903, pp. 419, 437; 1904, p. 395; 1906, p. 16; 1907, p. 13; 1908, pp. 8, 19; 1909, p. 12; 1912, p. 11; 1914, pp. 8, 9; 1915, pp. 8, 12; 1918, p. 8; 1919, p. 11; 1921, p. 5; 1923, p. 2; 1924, pp. 6, 7; 1925, p. 3; 1927, p. 2.
- Refrigeration—**
for fruit. (*See Temperature.*)
for meat, R 1909, p. 40.
- Rennet.** R 1925, p. 3.
- Repellants for insects.** C 17, n. 18; B 2, p. 15; B 10, p. 8; B 23, p. 21; R 1902, p. 350.
(*See also specific kinds.*)
- Repollo sin cabeza.** (*See Collards.*)
- Reptiles.** B 23, p. 16.
- Resin—**
compound formula, B 7, p. 19.
- Resin—Continued.**
oil. (*See Oil.*)
use in making tape, B 4, p. 12.
- Rhabditis.** B 13, p. 15.
- Rhaphidites in plants.** R 1903, p. 437.
- Rheedia edulis.** (*See Mountain plum.*)
- Rhinoceros beetle on coconuts.** R 1915, p. 44; 1917, p. 34.
- Rhipicephalus sanguineus** on dogs, R 1927, p. 27.
- Rhizoctonia—**
ferrugena on seedlings, R 1925, pp. 30, 38.
solani on potatoes, R 1903, p. 450.
sp., on cotton, R 1925, p. 37.
sp., on roselle, R 1925, p. 39.
sp., on tomatoes, R 1921, p. 20.
- Rhizoctoniase on beans.** R 1925, p. 36.
- Rhodes grass as forage crop.** R 1911, p. 44; 1912, p. 43.
- Rhododendron.** R 1910, p. 15.
- Rhubarb.** B 7, p. 49.
- Rice—**
absorption of nutrients, R 1916, p. 15.
acreage, R 1901, p. 397; 1918, p. 21; 1919, p. 32.
ash composition, R 1917, p. 16.
assimilation of iron, R 1913, p. 15; 1916, p. 15; 1917, p. 16.
chlorosis, B 16, p. 29; R 1909, p. 31; 1913, p. 14; 1915, p. 14; 1919, pp. 15, 16; 1920, p. 13; 1921, pp. 7, 8; 1922, p. 3.
cracked, feeding value, R 1909, p. 42.
culture, R 1901, p. 412; 1903, p. 421; 1905, p. 13; 1906, p. 13; 1909, p. 11; 1918, pp. 23, 24; 1919, pp. 10, 36; 1920, pp. 5, 6, 38; 1921, p. 15; 1922, p. 9; 1923, p. 8.
diseases, R 1917, p. 30; 1922, pp. 3, 16; 1923, pp. 8, 15; 1925, p. 39.
guano as fertilizer, B 25, p. 19.
importation, R 1901, p. 395; 1905, p. 13; 1916, p. 9.
insect pests, B 2, p. 9.
lime-magnesia ratio, C 10, p. 3; B 12, p. 12; R 1911, p. 18.
on calcareous soils. (*See Rice chlorosis.*)
straw, analyses, B 16, p. 31.
sulphate of ammonia v. nitrate of soda as fertilizer, R 1917, p. 10.
- Riverwash.** (*See Soils.*)
- Road—**
making for coffee plantations, C 15, p. 14.
surfacing material, R 1927, p. 4.
- Roads.** B 3, p. 53; R 1901, p. 391; 1928, p. 2.
- Roble tree.** (*See Tecoma pentaphylla.*)
- Rock crushers for limestone areas.** B 33, p. 6.
- Roof for shading plants.** C 5, p. 9.
- Roofs for cattle houses in Tropics.** B 29, p. 13.
- Root—**
beer substitutes, R 1905, p. 38.
crops as chicken feed, C 19, p. 21.
- Ropes from native plants.** R 1903, p. 437; 1904, p. 395.
- Rose apple.** (*See Pomarosa.*)
- Roselle—**
diseases, R 1905, p. 23; 1925, pp. 29, 39.
for jelly making, R 1905, p. 38.
influence of season on, R 1908, p. 20.
notes, R 1904, p. 393.
photoperiodism, R 1924, p. 11.
- Rosellinia bunodes—**
host plants, B 17, p. 17.
on coffee, B 17, p. 15; R 1925, p. 37.
- Roses—**
diseases, R 1925, p. 39.
insect pests, R 1907, p. 38.
notes, R 1905, p. 18.
- Rosin mixture, insecticidal value.** R 1903, p. 459.

- Rotation, R 1905, p. 13; 1909, p. 11; 1910, p. 8; 1914, p. 8; 1916, p. 5; 1918, p. 24; 1919, p. 10; 1920, pp. 5, 7; 1921, p. 2.
- Roundworm—
in poultry, R 1926, p. 30.
in swine, R 1925, p. 23; 1927, p. 27.
- Roup of poultry, R 1926, p. 31.
- Royal palm—
as source of honey, C 13, p. 28; B 15, p. 12; R 1908, p. 28.
Cuban, notes, B 15, p. 12;
interplanted with coffee, B 13, p. 17.
leaves, uses, B 15, p. 18; R 1903, p. 437.
root nodules, R 1911, p. 38.
seed as hog feed, R 1909, p. 39.
- Roystonea borinquena*. (See Royal palm.)
- Roystonea regia*. (See Royal palm, Cuban.)
- Rubber—
Ceará, R 1903, p. 439; 1905, p. 34.
Central American—
culture, R 1903, p. 438; 1904, p. 404; 1905, p. 34; 1907, pp. 23, 25; 1912, p. 29.
tapping, R 1910, p. 39; 1911, p. 30; 1913, p. 24; 1914, p. 25.
diseases, R 1925, p. 29.
industry, R 1910, p. 12.
insect pests, R 1903, p. 446.
Para, R 1905, p. 34.
seed, viability, R 1912, p. 30.
West African silk, R 1903, p. 439; 1904, p. 404; 1910, p. 39.
- Rubus fruticosus*, R 1910, p. 15.
- Rufous scale on citrus, R 1920, p. 24.
- Ruiseñor, B 23, p. 18.
- Rupture-wort, analyses, B 16, p. 10.
- Rural credits, R 1913, p. 10; 1914, p. 11; 1916, p. 10; 1923, p. 2.
- Rust mite on citrus, B 10, p. 12; B 33, p. 28; R 1907, p. 33; 1909, p. 25; 1923, p. 13.
- Rye—
growth at Rio Piedras, R 1902, p. 337.
on calcareous soils, B 16, p. 11.
- Sabal causiarum*, R 1926, p. 29; 1927, p. 25.
- Sabino. (See *Magnolia splendens*.)
- Saccharomyces*—
apiculatus, R 1907, p. 44.
ellipsoideus, R 1907, p. 44.
theobromae, R 1907, p. 41.
- Saccharum officinarum*. (See Sugarcane.)
- Saguerus saccharifer*. (See East India sugar palm.)
- Saissetia hemisphaerica*. (See Hemispherical scale.)
- Salicaceæ on calcareous soil, B 16, p. 10.
- Salix humboldtiana*, R 1914, p. 31.
- Salsify, cultural directions, B 7, p. 49.
- Sal soda mixture, insecticidal and fungicidal value, C 4, p. 3; B 10, pp. 23, 29.
- Salt—
effect on coconut yield, R 1922, p. 8; 1923, p. 6; 1928, p. 20.
effect on milk yield of cows, B 29, p. 12.
manufacture, R 1915, pp. 10, 11.
marsh grasses, B 3, p. 21.
works, R 1923, p. 13.
(See also Sodium chloride.)
- Salvia*, R 1905, p. 18.
- Saman—
as source of honey, B 15, p. 13.
interplanted with—
cacao and rubber, R 1907, p. 23.
coffee, R 1910, p. 40; 1913, p. 24.
pineapples, R 1905, p. 30; 1914, p. 21.
notes, R 1904, p. 395.
- San Juan—
Bautista, notes, B 3, p. 8.
distance from New York and New Orleans, B 15, p. 5.
division into sections, C 14, p. 11.
settlement and development, B 3, p. 8.
- Sanatol. (See Creolin.)
- Sancocho, B 2, p. 10; B 17, p. 22; R 1902, p. 345.
- Sand, use in storing fruit, R 1923, p. 14.
- Sandy river loam, effect on cane germination, R 1925, p. 20.
- Sansevieria*, R 1903, p. 436; 1904, p. 395; 1905, p. 17; 1906, p. 15.
- Sansevieria*—
guineensis. (See Sansevieria.)
kirkii. (See Sansevieria.)
longiflora. (See Sansevieria.)
zeylanica. (See Sansevieria.)
- Santurce, C 14, p. 11.
- Sap reaction in pineapple plants, R 1927, p. 21.
- Sapodilla tree, R 1903, p. 441; 1905, p. 35.
- Sapote—
mamey. (See Marmalade fruit tree.)
Mexican, R 1903, p. 441.
- Sarcodina in soils, R 1912, p. 13.
- Sawdust, use in storing fruit, R 1923, p. 14.
- Scabiosa arvensis*, analyses, B 16, p. 10.
- Scale insect fungus, notes, B 10, p. 15.
(See also specific kinds.)
- Scale insects on oranges, R 1903, p. 456.
(See also specific kinds.)
- Scapteriscus*—
agassizii. (See Changa.)
didactylus. (See Changa.)
spp., habitats, R 1902, p. 347.
victinus. (See Changa.)
- Schinopsis lorentzii*, R 1903, p. 438.
- Schistosoma mansoni*, R 1928, p. 36.
- Schizophyllum*—
lobatum in Java, R 1903, p. 464.
sp., on cane, R 1903, p. 463.
- School—
agricultural, at the station, R 1910, p. 13.
gardens, R 1904, p. 387.
- Sclerotium*—
rolfsii on peppers, R 1925, p. 38.
rolfsii on wheat, R 1917, p. 30.
sp., on coffee, R 1903, p. 461; 1904, p. 399.
sp., on eggplants, B 7, p. 37.
sp., on tomatoes, B 7, p. 55.
- Scolopendra alternans*. (See Centipedes attacking changa.)
- Screw-worm flies on domestic animals, R 1928, p. 36.
- Sea—
kale. (See Chard.)
shells, notes, B 11, p. 18.
water as a spray, B 11, p. 6.
- Seagrape tree—
insect pests, R 1912, p. 34; 1916, p. 28.
notes, R 1903, p. 441.
- Seasons, dry and rainy, R 1921, pp. 6, 7.
- Seaweed, fertilizing value, R 1910, p. 23; 1913, p. 9; 1915, p. 10.
- Sechium edule*. (See Chayote.)
- Seed—
acquisition and distribution, R 1903, p. 442; 1904, p. 388; 1906, p. 24; 1909, pp. 13, 23.
as affected by climate. (See Climate.)
boxes, B 7, p. 14.
deterioration, B 20; R 1905, p. 17.
fumigating, C 17, p. 21.
preservation, C 17, p. 19; B 20, p. 26; R 1921, p. 16.
preservation containers. (See Jars.)
selection, value, C 17, p. 24; B 33, p. 14.
- Selenaspidus articulatus* on citrus, B 33, p. 31; R 1907, p. 38.
- Sen de dos hojas. (See Mani cimarrona.)
- Sensitive plant for denuded areas, R 1914, p. 9.
- Septoria lycopersici* on tomatoes, R 1925, p. 39.
- Serradella, lime effects, B 11, p. 29; B 16, p. 8.
- Setaria italica*. (See Millet.)
- Shaddocks, introduction, B 33, p. 2.
(See also Grapefruit.)

Shade, effect on honey production, R 1916, p. 27.

Shed—
for cattle, B 29, p. 13.
for curing tobacco, B 5, pp. 12, 27, 38; R 1904, pp. 412, 422.
for milking, R 1927, p. 4.

Sheep—
African woolless, crossbreeding, R 1908, p. 39; 1909, p. 39; 1910, p. 43; 1911, p. 42; 1913, p. 32.
grazing on coffee lands, R 1910, p. 43.
manure, fertilizing value, R 1910, p. 23.
notes, R 1901, pp. 412, 414; 1905, p. 19; 1908, p. 39.
Tunis, R 1913, p. 32.

Shellac—
bands for ant control, C 17, p. 18.
for packed fruits, R 1920, p. 36; 1921, p. 27.

Shipping facilities, notes, R 1919, p. 8.
(See also Porto Rico transportation.)

Shorts as feed, B 29, p. 12; R 1909, pp. 39, 42.

Sick soils. (See Soils.)

Sida spp., as source of honey, B 15, p. 15.

Sideroxylon foetidissimum, B 23, p. 20.

Silage—
fermentation, B 29, p. 12.
making, R 1908, p. 15; 1909, p. 41; 1911, p. 43; 1924, p. 5.
palatability, R 1924, p. 6.

Silica as a plant food, R 1909, p. 18.

Silk—
cotton tree, R 1903, p. 438.
oak tree, insect pests, R 1914, p. 35.
oak tree, notes, R 1904, p. 395.

Silos, R 1908, p. 15; 1909, p. 41; 1924, p. 5.

Siphia flava—
on host plants, R 1921, p. 23.
on sugarcane, R 1915, p. 45; 1916, p. 28; 1921, p. 23.

Sisal—
Bahama, R 1903, p. 436; 1904, p. 395; 1905, p. 22.
culture, R 1905, p. 17; 1906, p. 15; 1907, p. 12; 1908, p. 14; 1909, p. 12; 1912, p. 11; 1919, p. 12.
diseases, R 1925, pp. 33, 39.
notes, R 1910, p. 12.

Sissoo tree. (See *Dahlbergia sissoo*.)

Skin disease of cattle, R 1925, p. 24.

Slaughterhouse by-products, R 1909, p. 42.

Sleep, need in Tropics, R 1912, p. 17.

Sloanea sp. (See Motilla tree.)

Slug-shot, insecticidal value, R 1902, p. 342; 1903, p. 448.

Slugs—
attacking beans and tobacco, R 1917, p. 34.
control, C 17, p. 18; R 1917, p. 34; 1926, p. 5.

Snails—
as parasite carriers, R 1928, p. 36.
attacking sunn hemp, R 1920, p. 26.

Snapdragons, R 1923, p. 3; 1926, p. 10.

Soap mixtures for insect control, C 7, p. 2; C 17, pp. 10, 11, 13, 19; B 7, p. 19; B 10, pp. 27, 28, 29, 31.

Soaps, compatibility chart, C 17, p. 23.

Soda mixture as insecticide, B 10, p. 30.
(See also Sal soda.)

Sodium—
acetate, use in determining soil acidity, R 1912, p. 15.
as nutrient of pineapple plant, R 1927, p. 23.
bicarbonate solution as fungicide, B 33, p. 30.
carbonate, effect on pineapple plant, B 11, p. 31.
chloride—
effect on cacao beans, R 1926, p. 7.
use in drinking water, R 1912, p. 17.
(See also Salt.)

Sodium—Continued.
cyanide mixture as fumigant, C 17, p. 22.
fluoride—
effect on algae, C 10, p. 7.
insecticidal value, C 17, p. 7.
nitrate. (See Nitrate of soda.)

Soil—
aeration, B 8, p. 11; B 14, p. 15; R 1925, p. 8.
conditions, influence on insects, B 2, p. 10.
points, homemade, R 1925, p. 7.
survey of Porto Rico, B 1, p. 12; B 3; R 1902, p. 333; 1903, p. 429; 1913, p. 11.

Soils—
acid, B 13; R 1908, pp. 29, 41.
acidity determination, R 1912, p. 15.
Adjuntas. (See Soils, clay, red.)
adobe, B 3, pp. 31, 34, 43.
alkaline, B 3, p. 42; B 11, p. 31; B 13, p. 22; R 1908, p. 42.
bacterial content, C 11, p. 3.
burning. (See Burning.)
calcareous, B 11; B 16; R 1910, p. 21; 1911, p. 20; 1913, p. 14.
cane, B 9, p. 12; R 1908, p. 11; 1909, p. 18.
carbonate determination, R 1925, p. 9.
catalase. (See Catalase.)
citrus, B 33, p. 4; R 1910, p. 21; 1913, p. 20.
clay, C 15, p. 9; B 3, pp. 25, 43; B 8, p. 12.
clay, red, C 15, p. 8; B 3, pp. 30, 43; B 14; R 1911, p. 22; 1913, pp. 11, 12; 1914, p. 14; 1915, p. 16.
colloidal matter, R 1925, p. 8.
disinfection, C 11; B 14, p. 18; R 1909, pp. 15, 30; 1910, p. 17.
fermentation, C 12, p. 23.
formation and texture, R 1901, p. 385.
“heavy and light,” B 33, p. 6.
liming. (See Liming.)
loam, B 3, pp. 20-23, 26, 27, 28, 33, 34, 35, 38, 43; B 8, p. 13.
mango, B 24, p. 4.
management, C 6, p. 3; R 1902, p. 353; 1903, p. 429.
mineral nutrients, R 1908, p. 40; 1912, p. 14.
moisture, B 21, p. 10; R 1925, pp. 7, 8.
moisture effect on *Rhizoctonia ferruginea* infection, R 1925, pp. 30, 31.
nitrogen economy. (See Nitrogen economy.)
notes, R 1909, p. 29; 1917, p. 5; 1919, p. 15.
Protozoa. (See Protozoa.)
riverwash, B 3, p. 20.
sand, B 3, pp. 17, 18, 19; B 8, p. 12; R 1912, p. 19.
sick, C 11, pp. 7, 11; C 12; B 14, p. 14; R 1909, p. 15; 1911, pp. 22, 37.
sterilization, C 11, p. 4; C 17, p. 25; R 1915, pp. 34, 38, 39; 1925, p. 34.
sulfocification, R 1923, p. 4; 1924, p. 9; 1925, p. 6.
tobacco, C 12, p. 21; B 5, pp. 16, 32; R 1904, p. 414.
tomato, B 7, p. 51.
Tropical, R 1912, pp. 8, 15; 1914, p. 8.
vegetable, B 7, p. 10.
water supply to plants, R 1925, p. 7.
(See also Lime-magnesia ratio.)

Soja bean. (See Soybeans.)

Solanum—
mammosum. (See Eggplant, wild.)
torvum. (See Eggplant, wild.)
tuberosum. (See Potatoes.)

Solenopsis geminata. (See Ants, brown.)

Sooty mold on mangoes. (See *Meliola mangiferae*.)
(See also specific kinds.)

Sorehead in chickens. (See Chickens, diseases.)

- Sorghums—**
as forage crop, B 29, p. 11; R 1903, p. 424; 1911, p. 44; 1912, p. 43; 1915, p. 11.
diseases, R 1925, p. 39.
insect pests, R 1921, p. 23.
- Soursop—**
insect pests, R 1903, p. 446.
notes, R 1903, p. 441; 1905, p. 35.
- Southern Cross plantation, B 18, p. 8.**
- Soybeans—**
as forage crop, R 1912, p. 44; 1927, p. 6.
as green manure crop, C 5, p. 4.
culture, R 1917, p. 40; 1918, pp. 21, 23; 1919, pp. 10, 36; 1920, p. 37; 1921, p. 15; 1922, p. 9; 1923, p. 8.
insect pests, R 1903, p. 423; 1923, p. 14.
on calcareous soils, B 16, pp. 14, 18.
photoperiodism, R 1924, p. 11.
- Spanish—**
lime, R 1903, p. 441; 1905, p. 39.
plum, R 1903, p. 441; 1904, p. 406.
- Spathodias campanulata, R 1921, p. 5.**
- Specific gravity and Baumé readings. (See Baumé.)**
- Sphaeloma fuscettii** on citrus. (See Citrus scab.)
- Sphaelotheca sorghi** on sorghum, R 1925, p. 39.
- Sphæropsidae** on bananas, R 1904, p. 397.
- Sphæropsis** sp., on coffee, R 1904, p. 399.
- Sphærostilbe—**
coccophila. (See Red-headed fungus.)
flavida, B 17, p. 12.
sp., on oranges, R 1901, p. 415.
- Sphagnum** moss on calcareous soils, B 16, p. 8.
- Sphenophorus** sp., on sugarcane, R 1903, p. 448; 1905, p. 10; 1907, p. 37.
- Spicaria (Fusarium) colorans** on cacao, R 1914, p. 30.
- Spider**, gray, B 23, p. 17.
- Spiders**, red, on citrus, B 10, p. 12; R 1923, p. 13.
- Spinach—**
cultural directions, B 7, p. 50.
lime-magnesia ratio, C 10, p. 13.
notes, R 1902, p. 337; 1926, p. 8.
- Rhizoctonia ferrugena** on. (See *Rhizoctonia ferrugena*.)
- Spininess** in pineapple plants, R 1927, p. 19.
- Spinose ear tick** on cattle, R 1927, p. 29.
- Spirogyra setiformis**, C 10, p. 6.
- Spondias—**
axillaris, R 1908, p. 19.
dulcis. (See *Jobo de la India*.)
lutea. (See *Jobo tree*.)
purpurea. (See Spanish plum.)
- Sporotrichum—**
citri on citrus, R 1925, p. 36.
sp., on hemispherical scale, B 10, p. 15.
sp., on red scale, R 1903, pp. 458, 463; 1904, p. 399.
- Spray materials**, compatibility chart, C 17, p. 23.
- Spraying—**
apparatus, B 7, p. 20; B 10, pp. 20, 21, 22, 35.
notes, C 17, p. 9; B 10, pp. 20, 34; R 1905, p. 24.
- Spring water**, analysis, R 1928, p. 2.
- Squash—**
culture, B 7, p. 50; R 1902, pp. 337, 339; 1920, p. 21.
diseases, B 7, p. 51.
insect pests, B 7, p. 51; R 1903, p. 448.
marketing, B 7, p. 50.
seed deterioration, B 20, pp. 6, 9.
- Staking, spacing, and lining hints**, C 15, p. 15; B 4, p. 15; B 7, p. 54.
- Star-apple, R 1903, p. 441; 1905, p. 36.**
- Starch—**
cacao, R 1907, p. 47.
cassava, R 1902, p. 340; 1904, pp. 391, 392.
edible canna, R 1904, p. 394.
in soils, C 12, p. 22.
- Starch—Continued.**
yautia, R 1904, p. 390.
- Starches**, manufacturing, R 1905, p. 22.
(See also specific kinds.)
- Steam plowing**, R 1911, p. 10.
- Steamship service**. (See Porto Rico transportation.)
- Stegomyia—**
egypti. (See Mosquitoes, yellow fever.)
calopus. (See Mosquitoes, yellow fever.)
- Stenocephalus (Delphax) saccharivora.** (See West Indian cane fly.)
- Stenopelmatus talpa.** (See Mole cricket, black.)
- Stephanurus dentatus—**
in swine, R 1927, pp. 28, 31; 1928, p. 38.
life history, R 1928, p. 37.
- Sterculia diversifolia, R 1903, p. 438.**
- Sterictiphora zaddachi** on hicaco and sea-grape, R 1916, p. 28.
- Sterilizing outfit** for field use, R 1915, p. 34.
- Sticktight fleas** on chickens, R 1926, p. 31; 1927, p. 27.
- Stilbella flavida—**
host plants, B 17, p. 13.
on coffee, B 17, p. 11; B 28; R 1912, p. 31; 1914, p. 28; 1915, p. 35; 1917, p. 24; 1918, p. 11; 1920, p. 17.
on guava, B 17, p. 13; R 1912, p. 31.
- Stilbum flavidum—**
on coffee, R 1903, pp. 449, 461; 1904, p. 398; 1906, p. 32; 1909, pp. 33, 35; 1910, pp. 35, 37.
on rough lemon, R 1904, p. 398.
- Stinging ants. (See Ants, brown.)**
- Stizolobium—**
aterrimum. (See Mauritius bean.)
cinereum as cover crop, B 19, p. 18; R 1914, p. 20.
deerlingianum. (See Velvetbean, Florida.)
niveum. (See Lyon bean.)
spp., B 19, pp. 18, 19; R 1913, p. 18; 1914, p. 20.
(See also Velvetbean.)
velutinum as cover crop, B 19, p. 18; R 1914, p. 20; 1920, p. 16.
- Stomach—**
poisons for insects. (See Insecticides.)
worms in cattle and goats, R 1925, p. 23; 1927, pp. 27, 29, 30.
- Storms—**
effect on citrus, B 33, p. 1.
effect on coffee, C 2, p. 1; R 1901, pp. 395, 398, 400; 1902, p. 334; 1907, p. 39; 1908, p. 33; 1909, p. 32; 1910, p. 37; 1927, pp. 1, 12.
effect on insects, B 2, pp. 5, 10; B 15, p. 6.
effect on sugarcane, R 1901, p. 403.
notes, B 3, pp. 20, 50; R 1927, p. 25.
(See also Thunderstorms.)
- Strategus quadrifoveatus.** (See Rhinoceros beetle.)
- Straw—**
bleaching, for hats, R 1918, p. 18.
use in shading plants, B 5, p. 18; R 1904, p. 416.
- Strawberries**, culture, R 1907, p. 28; 1911, p. 26.
- Streptothrix** spp., C 11, p. 5.
- String**, use in grafting, B 24, p. 11.
- Stringless Bonavist.** (See *Dolichos lablab*.)
- Striped cucumber beetle.** (See Cucumber beetle.)
- Strongylinae** spp., in mules, R 1928, p. 36.
- Strychnine—**
sirup preparation, C 17, p. 30.
sulphate for rats, C 17, p. 30.
- Subulura—**
brumpti in turkeys, R 1927, p. 27.
strongylina in guinea fowls, R 1927, p. 27.
- Sudan grass** as forage and cover crop, R 1914, p. 11; 1915, p. 11; 1916, p. 10.

- Sugar—**
- beets. (*See Beets.*)
 - industry, B 3, p. 51; B 9, p. 7; B 29, p. 3; R 1901, pp. 394, 402, 405; 1906, pp. 5, 6; 1907, p. 8; 1908, p. 10; 1910, p. 7; 1913, p. 7; 1919, p. 5; 1920, p. 5; 1921, p. 1.
 - palm, R 1904, pp. 393, 395; 1918, p. 14.
 - planters' station, organization, R 1910, p. 8.
- Sugarcane—**
- as source of honey, B 15, p. 15.
 - as windbreak, B 33, p. 21; R 1907, p. 33.
 - breeding, B 9, p. 9; R 1908, p. 12; 1919, p. 28; 1921, p. 16; 1922, p. 10; 1923, p. 8; 1924, pp. 3, 18; 1925, p. 17; 1926, p. 26; 1927, p. 16; 1928, p. 22.
 - chlorosis, R 1911, p. 20; 1912, p. 19; 1913, pp. 13, 14; 1914, p. 14; 1917, p. 10; 1918, p. 6.
 - culture—
 - for insect control, B 2, p. 11; B 23, p. 21; R 1907, p. 10.
 - in other countries, B 9, pp. 15, 16, 18; R 1910, p. 33.
 - in Porto Rico, B 9, pp. 12-19; R 1905, p. 10; 1906, p. 12; 1907, p. 9; 1908, p. 10; 1909, p. 9; 1911, p. 11; 1912, p. 10; 1915, p. 7; 1916, p. 5; 1920, p. 6; 1925, pp. 19-22; 1926, p. 2, 25.
 - primitive, B 3, p. 45; R 1901, p. 403.
 - deterioration after cutting, B 9, p. 36.
 - diseases, B 9, pp. 10, 38; R 1903, p. 463; 1905, p. 10; 1907, p. 37; 1908, p. 35; 1909, p. 36; 1925, p. 36; 1928, p. 33.
 - fermentation of roots, B 13, p. 11.
 - fertilization—
 - in other countries, B 9, pp. 30, 31, 32, 33.
 - in Porto Rico, C 6, pp. 14, 15; B 3, p. 46; B 9, p. 22; B 14, p. 10; R 1907, p. 9; 1915, p. 16; 1926, p. 25.
 - fertilizer requirements. (*See Fertilizer.*)
 - germination. (*See Sugarcane breeding.*)
 - "gran cultura," R 1928, p. 22.
 - insect nests, B 2, pp. 5, 9; B 9, pp. 38, 39; B 15, p. 15; R 1903, p. 448; 1905, p. 10; 1906, p. 28; 1907, pp. 36, 37; 1909, p. 25; 1910, p. 31; 1912, p. 36; 1915, pp. 42, 45; 1916, pp. 26, 28; 1918, p. 16; 1919, pp. 21, 22; 1921, pp. 23, 24; 1924, p. 3.
 - irrigation. (*See Irrigation.*)
 - Japanese. (*See Japanese.*)
 - juice, analyses, R 1908, p. 12; 1923, p. 9; 1924, p. 19; 1925, p. 19; 1926, pp. 10-14; 1927, p. 9.
 - loss of weight in shipping, B 9, p. 36.
 - mottling disease, R 1918, p. 19; 1919, pp. 6, 12, 21, 29; 1920, pp. 6, 7; 1921, p. 23; 1923, p. 1; 1925, p. 36.
 - nitrogen supply in soils. (*See Nitrogen economy.*)
 - notes, B 3, pp. 9, 21, 23, 32, 37; R 1901, pp. 396, 397; 1920, p. 5; 1924, p. 2; 1925, pp. 1, 4.
 - "primavera," R 1928, p. 22.
 - Rhizoctonia ferrugena* on. (*See Rhizoctonia ferrugena.*)
 - seed fumigation, R 1907, pp. 36, 37.
 - silage, B 29, p. 12; R 1909, pp. 41, 42; 1924, pp. 5, 6.
 - soils. (*See Soils.*)
 - storm effects. (*See Storms.*)
 - stripping, B 9, p. 35.
 - Uba. (*See Japanese cane.*)
 - Sulfocification in soils. (*See Soils.*)
- Sulphate of ammonia—**
- for cacao beans, R 1926, p. 7.
 - for coffee, B 31, pp. 14, 25.
 - for rice. (*See Rice.*)
 - importation, R 1928, p. 8.
- Sulphate of potash, importation, R 1928, p. 8.**
- Sulphur—**
- as fertilizer for pineapples, R 1924, p. 25; 1925, p. 9; 1927, p. 24.
 - as insecticide and fungicide, C 17, pp. 16, 26; B 33, p. 28; R 1909, p. 25; 1917, p. 30.
 - dioxide effect on fruit, R 1922, p. 15.
 - for nematode control. (*See Nematodes.*)
 - fumes—
 - effect on fabrics, etc., C 17, pp. 22, 23.
 - for catarrh of horses, R 1909, p. 37.
 - for control of bedbugs. (*See Bedbug.*)
- Sulphuric acid—**
- as soil disinfectant, R 1923, p. 15.
 - mixtures as plant and house fumigant, C 17, p. 22.
- Sun, effect on—**
- coffee trees, B 17, pp. 22, 23; R 1901, p. 400; 1913, p. 29.
 - health in Porto Rico, R 1901, p. 389.
 - honey production, R 1916, p. 27.
 - microbes, C 12, p. 23.
 - vegetable matter, B 18, p. 5; B 19, p. 9.
- Sunflower seed for poultry feed, R 1909, p. 40.**
- Sunflowers—**
- as forage crop, R 1905, p. 16; 1927, p. 6.
 - as windbreak, B 33, p. 21.
 - insect pests, R 1903, p. 448.
 - notes, R 1926, p. 10.
 - on calcareous soils, B 16, pp. 14, 19.
- Sunn hemp—**
- as coffee shade, R 1926, p. 20.
 - as cover crop, R 1920, pp. 6, 16; 1921, pp. 5, 10; 1922, p. 5; 1923, p. 5; 1925, pp. 9, 13.
 - as fiber crop, R 1919, p. 12.
 - as forage crop, B 29, p. 11; R 1920, p. 12.
 - as windbreak, B 33, p. 19; R 1920, p. 25.
 - insect pests, R 1920, p. 26.
 - moon effects, R 1922, p. 2.
 - snails on, R 1920, p. 26.
- Sunscaud of pineapples, B 8, p. 41.**
- Superphosphate, effect on seed germination, R 1905, p. 10.**
- Surinam cherry, R 1903, p. 441; 1905, p. 37; 1908, p. 22; 1909, p. 22.**
- "Susumber," R 1908, p. 20.**
- Swale grass, notes, R 1919, p. 24.**
- Swamp mahogany. (*See Eucalyptus robusta.*)**
- Swamps, C 20, p. 9; B 3, p. 13; R 1928, p. 36.**
- Sweet peas—**
- culture, R 1905, p. 18; 1922, p. 2; 1923, p. 3; 1924, p. 6; 1926, p. 10.
 - Rhizoctonia ferrugena* on. (*See Rhizoctonia ferrugena.*)
- Sweetclover. (*See Clover.*)**
- Sweetpotatoes—**
- acreage, R 1901, p. 397; 1918, p. 21; 1919, p. 33.
 - as cattle feed, R 1928, p. 4.
 - cane beetle fungus propagation on, R 1912, pp. 36, 37.
 - culture, R 1902, pp. 337, 339; 1908, p. 22; 1911, p. 26; 1912, p. 26; 1914, p. 17; 1916, p. 20; 1917, p. 20; 1920, p. 22; 1921, pp. 10, 11; 1922, p. 5; 1923, p. 6; 1924, p. 11; 1925, p. 13.
 - diseases, R 1903, p. 449; 1925, p. 39.
 - fertilization, R 1902, p. 353.

- Sweetpotatoes—Continued.**
food value, B 6, p. 23.
growing districts, B 3, pp. 18, 19, 23,
24, 28, 40.
insect pests, R 1914, p. 35.
market value, R 1902, p. 354.
photoperiodism, R 1925, p. 11; 1926,
p. 14.
wild, as source of honey, C 13, p. 29.
- Sweetsop,** R 1905, p. 35.
- Swietenia—**
macrophylla. (See Mahogany.)
mahagoni. (See Mahogany.)
- Swine—**
as disseminators of human hookworm.
(See Hookworm.)
diseases, R 1914, p. 10.
industry, R 1901, pp. 412, 414; 1903,
p. 429; 1905, p. 19; 1906, p. 10;
1907, p. 15; 1908, pp. 16, 39; 1910,
p. 3; 1911, p. 42; 1916, p. 10;
1918, pp. 9, 22; 1920, p. 7; 1921,
p. 4; 1923, p. 2.
kidney worm. (See *Stephanurus den-*
tatus.)
mineral nutrition, R 1909, p. 38; 1911,
p. 44.
parasites, R 1925, p. 22; 1927, pp. 27,
28; 1928, p. 36.
- Swiss chard.** (See Chard.)
- Sword bean—**
as cover crop, B 19, p. 13; R 1910,
p. 27; 1911, p. 25; 1913, p. 19;
1914, p. 11.
as forage crop, R 1905, p. 17; 1906,
p. 15; 1911, p. 44; 1912, p. 44;
1914, p. 11.
culture, R 1903, pp. 423, 434; 1908,
p. 22; 1912, p. 8.
for sugarcane plantations, R 1907,
p. 9.
- Symplocos sp.** (See Aceituna tree.)
- Syngamus—**
laryngeus in cattle and goats, R 1925,
p. 23; 1927, p. 27.
nasicola, R 1927, p. 28.
- Synthetocaulus capillaris** in goats, R 1927,
p. 28.
- Syphid fly,** R 1903, p. 444; 1907, p. 36;
1912, p. 37.
- Systema basalis—**
attacked by toad, R 1926, p. 6.
on sunflowers, R 1903, p. 448.
- Tabebuia spectabilis** culture, R 1917, p. 23.
- Tabonuco trees—**
as source of honey, B 15, p. 6.
notes, R 1903, p. 438.
- Tacca pinnatifida,** R 1904, p. 394.
- Tachinidæ,** B 2, p. 17; R 1902, p. 351.
“Tachuelo” tree insect pests, R 1912, p.
34.
- Tænia—**
crassicollis in the cat, R 1927, p. 27.
marginata in the dog, R 1927, p. 27.
soltum, R 1927, p. 30.
sp., in goats, R 1927, p. 28.
- Tahiti—**
apple, R 1903, p. 440; 1905, p. 38;
1909, p. 22.
gooseberry. (See Otaheite gooseberry.)
- Talc,** as fungicide, R 1917, p. 30.
- Talinum verticillatum,** R 1921, p. 11.
- Talipot palm,** R 1904, p. 395.
- Tallow,** B 4, p. 12; R 1913, p. 9.
- Tamarind—**
as source of honey, C 13, p. 29.
Madagascar, R 1903, p. 440; 1905, p.
41; 1906, p. 24; 1909, p. 22.
- Tamarindillo.** (See Partridge pea.)
- Tamarindus indica.** (See Tamarind.)
- Tangerines—**
curing, C 8, p. 12.
notes, R 1904, p. 392; 1905, p. 30.
- Tanglefoot** use in ant control, C 17, p. 18;
R 1913, p. 23.
- Tangleroot** of pineapples, B 8, p. 41.
- Taniers,** B 6, p. 8.
- Tankage—**
as fertilizer, C 12, p. 7.
feeding value, R 1909, p. 42.
for hogs, R 1909, p. 39.
- Tannias,** B 6, p. 8.
- Tannin—**
in cacao, R 1907, p. 47.
in divi-divi, R 1905, p. 36.
in persimmons, R 1907, p. 47.
in tea. (See Tea.)
- Tape making,** B 4, p. 12.
- Tapeworms—**
in dogs, R 1925, p. 23.
in mules, R 1928, p. 36.
in poultry, R 1926, p. 30.
- Tar, use in—**
building, R 1927, p. 5.
tree surgery, B 33, p. 29.
- Taro—**
culture, R 1902, p. 337; 1903, p. 433;
1910, p. 29; 1921, pp. 10, 11; 1922,
p. 5; 1923, p. 6; 1924, p. 15; 1925,
p. 13; 1927, p. 14; 1928, p. 19.
growing districts, B 3, pp. 31, 40.
insect pests, R 1903, p. 447; 1904, p.
396.
notes, B 6, pp. 7, 10; R 1901, p. 397.
photoperiodism, R 1928, p. 18.
starch, R 1904, p. 394.
- Tartaric acid,** use in ant control, C 17, p. 7.
- Taxation.** (See Porto Rico, land valuation.)
- Tayote.** (See Chayote.)
- Tea—**
culture, R 1903, pp. 422, 435; 1904, pp.
388, 403; 1905, p. 36.
leaves, tannin, R 1907, p. 46.
- Tecoma pentaphylla,** R 1903, p. 438.
- Teff grass,** as forage crop, R 1912, p. 44.
- “Teigigwerden” of pears, R 1907, p. 19.
- Telenomus monilicornis,** R 1907, pp. 35, 36;
1909, p. 27.
- Temperature, effect on—**
bacteria, C 12, p. 8.
fruit, R 1920, pp. 34, 35; 1923, p. 17.
- Tent for plant propagation,** R 1903, p.
430.
- Teosinte—**
as forage crop, R 1903, p. 424; 1912, p.
43; 1921, p. 16.
notes, R 1902, pp. 337, 341.
- Tephrosia candida—**
as cover crop, R 1920, p. 16; 1921,
p. 10; 1922, p. 1; 1925, p. 9; 1926,
p. 20.
as windbreak, B 33, p. 19.
photoperiodism R 1922, p. 5; 1923, p.
5; 1924, p. 10.
- Terra rossa,** B 13, p. 15.
- Tetracha sobrina infuscata,** B 23, p. 17.
- Tetrachlorethylene as anthelmintic,** R 1928,
p. 37.
- Tetrameres fissispinus** in chickens, R 1927,
p. 27.
- Tettigonia sirena,** R 1921, p. 24.
- Tettigoniids on beans,** R 1903, p. 448.
- Theobroma—**
bicolor. (See Cacao, Alligator.)
cacao. (See Cacao.)
pentagona. (See Cacao.)
- Theobromin** in cacao, R 1907, p. 47.
- Thespesia—**
grandiflora. (See Maga tree.)
populnea, R 1903, p. 438.
- Thielaviopsis ethaceticus** on coconuts, R
1912, p. 32.
- Thorny headed hog worm,** R 1925, p. 23;
1927, p. 27.
- Threadworm** on coffee, B 17, p. 28.
- Thrips—**
on cashew apple, R 1903, p. 446.
on citrus, R 1919, pp. 8, 24.
on mango, B 24, p. 24; R 1908, p. 28;
1911, p. 36.
on onions, B 7, p. 45.

- Thunbergia*—
alba, R 1919, p. 21.
erecta cærulea, R 1919, p. 21.
lilacina, R 1919, p. 21.
- Thunderstorms as source of nitrogen, B 13, p. 8.
- Tiburones Canal, B 3, p. 42.
- Tick. (See Cattle tick.)
- Ti-es, Cuban. (See Cuban ti-es.)
- Tiger beetle. (See *Tetracha sobrina infuscata*.)
- Tile receptacles for plants, R 1916, p. 20.
- Tiles and tile making, B 9, p. 13; R 1901, p. 403; 1906, p. 8; 1909, p. 8; 1911, p. 10.
- Timber—
culture, R 1904, p. 396.
native, collection, R 1903, p. 430.
(See also specific kinds.)
- Tineid moth parasitic on scale, R 1903, p. 447.
- Tingitid on eggplants, R 1915, p. 42.
- Tingitidae on cassava, R 1903, p. 447.
- Tithonia rotundifolia* photoperiodism, R 1924, p. 11.
- Toad—
giant, introduction, R 1923, p. 15.
Surinam, introduction, R 1926, p. 5; 1928, p. 7.
- Toads, B 2, p. 18; B 23, p. 18; R 1902, p. 352.
- Tobacco—
as source of honey, B 15, p. 14.
chlorosis, B 11, p. 39.
compatibility chart, C 17, p. 23.
culture B 5, pp. 1-24, 29-41; R 1903, p. 428; 1904, p. 410; 1905, p. 11; 1906, p. 6, 11; 1908, p. 12; 1909, p. 10; 1916, p. 7, 9; 1919, p. 6.
culture in Turkey, B 5, p. 33.
curing, native, B 3, p. 46.
curing and fermentation, B 5, pp. 13, 27, 28, 39, 41; R 1904, pp. 412, 413, 420; 1907, p. 16.
diseases, B 5, p. 12; R 1903, p. 464; 1904, pp. 397, 418; 1907, p. 16; 1925, p. 39.
dust, B 8, p. 38; R 1907, p. 38.
fertilization, C 6, p. 14; B 5, p. 24; R 1904, p. 419.
fumigation, R 1909, p. 26; 1923, pp. 11, 12.
growing districts, B 3, pp. 19, 21, 24, 32, 40, 46, 47.
industry, B 3, pp. 10, 51; R 1901, pp. 394, 406; 1910, p. 9; 1911, pp. 9, 12; 1912, p. 10; 1913, p. 7; 1920, p. 10.
insect pests, B 2, pp. 5, 9; B 5, pp. 12, 19, 31; B 23, p. 3; R 1903, p. 448; 1904, p. 396; 1907, pp. 17, 34; 1909, p. 26; 1914, p. 35.
insecticidal value, C 4, pp. 2, 3; C 6, p. 5; C 17, p. 14; C 19, p. 20; B 7, p. 19.
irrigation. (See Irrigation.)
lime-magnesia ratio, C 10, p. 4.
notes, B 2, p. 12; R 1901, pp. 396, 397; 1902, p. 337.
soils. (See Soils.)
slugs on, R 1917, p. 34.
- Tolmarthus taylori*. (See Clérigo.)
- Tomatoes—
culture, B 7, p. 51; R 1902, pp. 337, 339; 1903, p. 424; 1904, p. 403; 1907, p. 29; 1915, p. 27; 1918, p. 19; 1919, pp. 20, 25; 1920; p. 20; 1921, p. 19; 1922, pp. 2, 12; 1923, pp. 3, 10; 1924, p. 20; 1926, pp. 8, 9, 24; 1928, p. 11.
diseases, B 7, p. 55; R 1903, p. 450; 1904, p. 398; 1917, p. 29; 1921, pp. 19, 20; 1925, pp. 29, 30, 34, 39.
insect pests, B 2, p. 9; B 7, p. 55; R 1903, p. 448; 1907, p. 36; 1921, p. 19; 1923, p. 14.
marketing, B 7, p. 54.
seed deterioration, B 20, pp. 6, 18, 29.
- Top-minnows for mosquito control, C 14, p. 7; C 20, p. 9.
- Toronja. (See Grapefruit.)
- Torreens system of land title registration, R 1913, p. 10; 1914, p. 12.
- "Tosca," composition and use, R 1927, pp. 4, 5.
- Tostado, fungus disease, B 28, p. 7.
- Toxotrypana curcicauda*, R 1912, p. 36.
- Trachylobium verrucosum*. (See Copal.)
- Tradescantia, notes, C 12, p. 22; B 17, p. 17.
- Transpiration studies with pineapple plants. (See Pineapples.)
- Transportation. (See Porto Rico.)
- Trap lanterns for insect control, B 2, p. 14; B 23, p. 22; R 1902, p. 350; 1916, p. 26; 1917, p. 34.
- Traveling. (See Experiment station.)
- Tree—
sticky, insecticidal value, C 17, p. 18.
surgery for citrus, B 33, p. 29.
tomato, R 1903, p. 435.
trunks, growth, B 31, p. 3.
- Trefoil, R 1928, p. 5.
- Trematodes in domestic animals, R 1925, p. 23; 1927, p. 27.
- Trichodectes* sp. in goats, R. 1927, p. 28.
- Tricholoma rosea* as forage crop, R 1913, p. 33.
- Trichuris*—
depressiusculus in dogs, R 1927, p. 27.
ovis. (See Whipworms in cattle.)
suis in swine, R 1927, p. 28.
- Tricosphaera sacchari* on sugarcane, R 1907, p. 37.
- Tricresol as soil disinfectant, B 14, p. 18; R 1909, p. 15; 1910, pp. 17, 18.
- Trifolium*—
incarnatum. (See Clover, crimson.)
pratense. (See Clover, red.)
- Triphasia monophylla*, R 1908, p. 19.
- Tripsacum laxum*. (See Guatemala grass.)
- Trombicula* sp.—
in chickens, R 1927, p. 29.
in horses, R 1927, p. 28.
- Trombidium locustarum*. (See Mite, red.)
- Trough, feeding, R 1926, p. 4.
- Trucks for hauling fruit, C 8, p. 17.
- Tuberculosis of cattle, B 29, p. 9.
- Tuna. (See *Opuntia* spp.)
- Tung oil. (See Chinese wood-oil.)
- Turkeys—
industry, R 1906, p. 10; 1909, p. 39.
parasites, R 1927, p. 27.
- Tumeric, R 1905, p. 37.
- Turnip—
as forage crop, R 1905, p. 16; 1912, p. 43.
culture, B 7, p. 55; R 1902, p. 337; 1922, p. 2; 1923, p. 3; 1928, p. 10.
diseases, B 7, p. 56; R 1925, p. 30.
insect pests, B 2, p. 9; R 1907, p. 35.
marketing, B 7, p. 56.
seed deterioration, B 20, p. 29.
- Turpentine distilleries, B 10, p. 32.
- Tyrannus dominicensis dominicensis*. (See Pitirre.)
- Uredo*—
arachidis on peanuts, R 1925, p. 38.
artocarpi on breadfruit, R 1925, p. 36.
concors on beans, R 1917, p. 28.
gossypii on cotton, R 1903, p. 465.
pallida on corn, R 1925, p. 37.
- Urena*—
lobata. (See Jute, wild.)
sinuata, R 1903, p. 436.
- Urine, horse, composition, C 15, p. 22.
- Urocystis cepulae* on onions, B 7, p. 45.
- Uromyces*—
appendiculatus on beans, R 1925, p. 36.
dolicholi on pigeon pea, R 1925, p. 38.
sp., on beans, R 1903, p. 467.
- Uspulun solution, fungicidal value, R 1925, p. 34.
- Ustilago zeæ* on corn, R 1925, p. 37.

- Uettes anastrephae.* (See *Opius anastrephae*.)
- Uvaria rufa*, R 1918, p. 14.
- Uvero tree. (See Seagrape tree.)
- Vangueria edulis*. (See Tamarind, Madagascar.)
- Vanilla*—
culture, B 26; R 1910, p. 39; 1911, p. 30; 1912, p. 29; 1913, p. 23; 1914, p. 25; 1915, p. 32; 1916, pp. 23, 24; 1917, p. 26; 1918, p. 10; 1919, pp. 9, 18; 1920, p. 17; 1921, p. 16; 1922, p. 8.
curing, B 26, p. 28; R 1916, p. 23; 1917, p. 27; 1919, p. 19; 1920, p. 17; 1921, p. 11.
diseases, R 1915, p. 35; 1917, p. 29; 1921, p. 11; 1922, p. 8; 1923, p. 15; 1924, p. 28; 1925, pp. 26, 40; 1926, p. 30.
insect pests, R 1917, p. 34.
marketing, B 26, p. 4; R 1916, p. 23.
notes, R 1905, p. 41.
- Vanilla*—
eggersii, R 1911, p. 30.
phœntha, R 1912, p. 29.
planifolia. (See *Vanilla*.)
pompona. (See *Vanilla*.)
- Vanillin*—
from oil of cloves, B 26, p. 4.
in vanilla beans, B 26, p. 4.
"Vaquita" on oranges, R 1908, p. 25.
- Varnish, R 1905, p. 35; 1927, p. 3.
"Vegas," B 5, p. 9.
- Vegetable musk, R 1904, p. 393.
- Vegetables*—
culture, B 7; R 1902, p. 335; 1903, p. 424; 1904, p. 403; 1905, p. 32; 1907, p. 21; 1909, p. 23; 1910, p. 29; 1912, p. 27; 1914, p. 26; 1915, p. 27; 1919, pp. 20, 25; 1920, p. 19; 1922, p. 1; 1923, p. 3; 1926, p. 8; 1928, p. 9.
deterioration, B 20; R 1911, p. 26.
diseases, B 7, p. 15; R 1907, p. 35; 1917, p. 28.
fertilization. (See Fertilizers.)
insect pests, B 7, p. 18; R 1902, p. 342; 1907, pp. 35, 36.
importation, R 1901, p. 395.
irrigation. (See Irrigation.)
tropical climate effects, R 1928, p. 9.
(See also specific kinds.)
- Vegetation as affected by moisture, R 1921, p. 7.
- Veils, use in handling bees, C 13, p. 10.
- Velia sicyoides*. (See Bejuco de carro.)
- Velosiella cajani* on pigeon peas, R 1925, pp. 38, 39.
- Velvetbean*—
as cover crop, B 19, p. 15; R 1903, p. 423; 1910, p. 26; 1911, p. 25; 1913, p. 18; 1914, p. 9; 1916, pp. 5, 7; 1917, p. 5; 1919, pp. 8, 11; 1920, p. 6; 1921, pp. 3, 10; 1923, pp. 1, 2; 1924, p. 7.
as forage crop, R 1905, p. 15; 1906, p. 14; 1907, p. 12; 1914, p. 11; 1915, p. 11; 1916, p. 10; 1920, pp. 11, 12; 1925, p. 4; 1927, p. 6; 1928, pp. 5, 6.
as windbreak, B 33, p. 21.
breeding, R 1923, p. 8.
Florida, B 19, p. 19; R 1914, p. 20.
silage, R 1924, pp. 5, 6.
(See also *Stizolobium*.)
- Veratrum*—
album. (See Hellebore.)
viride. (See Hellebore.)
- Verbena, R 1926, p. 10.
- Veronica occidentalis*. (See Slugs.)
- Verrucosis on oranges, R 1901, p. 415.
- Vertebrates, B 23, p. 16.
- Vetch—
as affected by citric acid, R 1908, p. 41.
as forage crop, R 1905, p. 16; 1925, p. 4.
on acid soil, B 13, p. 8.
on calcareous soils, B 16, p. 11.
- Vigna*—
catjang. (See Cowpeas.)
sinensis. (See Cowpeas.)
- Vinagrera disease, B 28, p. 7.
- Vinsonia stellifera* on coconuts, R 1903, p. 447.
- Violet tree culture, R 1928, p. 20.
- Violets, R 1923, p. 3.
- Vireo latimeri*. (See Julian chiv.)
- Virgin Islands, agricultural possibilities, R 1917, p. 8.
- Vitex divaricata*. (See Higuerillo tree.)
- Vitis vinifera*. (See Grapes.)
- Voa-Vanga. (See Tamarind, Madagascar.)
- Wagons, for hauling fruit, C 8, p. 8.
- Walker Industrial Cotton Co., notes, R 1903, p. 425.
- Walkingsticks, R 1902, p. 346.
- Walnuts, English, R 1907, p. 28.
- Waltheria americana*, R 1917, p. 33.
- War—
with Spain, R 1901, p. 398.
World, R 1914, p. 7; 1915, p. 10; 1918, p. 5.
- Water—
and relation to abnormality in pine-apples, R 1927, p. 21; 1928, p. 26.
consumption by cane in Java, B 9, p. 12.
drinking, R 1901, p. 390.
excess effect on gastro-intestinal tract, R 1912, p. 17.
ground, depth below surface, R 1906, p. 9.
requirements—
for cane in Hawaii, B 9, p. 12.
of cows, B 29, p. 12.
smartweed. (See Blackheart as source of honey.)
spring, analysis, R 1928, p. 2.
standing, as breeding places for mosquitoes, C 14, p. 9.
supply for gardening, B 7, p. 9.
table fluctuations in citrus groves, B 33, p. 5.
See also Irrigation.
- Watermelons—
culture, B 7, p. 56; R 1910, p. 29; 1919, pp. 25, 26; 1920, p. 22.
diseases, B 7, p. 58; R 1925, p. 40.
insects pests, B 7, p. 58; R 1923, p. 14.
marketing, B 7, p. 57.
notes, R 1902, pp. 337, 340.
seed deterioration, B 20, p. 29.
- Wattle—
black, for reforestation, R 1903, p. 438.
golden. (See *Acacia pycnantha*.)
oleander. (See *Acacia nerifolia*.)
Sydney Golden. (See *Cassia floribunda*.)
- Wax—
bees. (See Beeswax.)
for girdling trees, C 4, p. 2.
for grafting, B 4, p. 19.
scale on citrus, R 1903, p. 445.
scale on roses, R 1907, p. 38.
- Weevils—
on coffee, R 1905, p. 46; 1906, pp. 28, 31; 1908, pp. 27, 33; 1909, pp. 28, 33; 1910, p. 37; 1915, p. 42.
on eggplants, R 1915, pp. 43, 45.
on higuerillo trees, R 1906, p. 31.
on pineapples in Jamaica, R 1918, p. 17.
on sweetpotatoes, R 1914, p. 35.
- Weight equivalents, C 5, p. 4; B 3, p. 9; B 30, p. 3; R 1901, pp. 400, 414; 1903, p. 451.
- West Indian—
cane fly, B 15, p. 15; R 1921, p. 24.
leafhopper. (See *Delphax saccharovora*.)
peach scale—
host plants, R 1906, p. 27.
on mulberry, R 1903, p. 446.
on orange trees, R 1903, p. 458.
on papayas, R 1903, p. 446, 467.
on peach trees, R 1903, p. 446.

Wheat—

as affected by citric acid, R 1908, p. 41.
carbonic acid production by roots. (See Carbonic acid.)
cracked, as feed, R 1909, pp. 40, 42.
culture, R 1917, p. 35; 1918, p. 18; 1921, p. 19; 1922, p. 12; 1923, p. 10.
diseases, R 1917, p. 30; 1922, p. 12.
flour importation, R 1901, p. 395.
insect pests, R 1921, p. 23.
lime-magnesia ratio, C 10, p. 3, 10; B 12, p. 9.
on acid soil, B 13, p. 8.
on calcareous soils, B 16, p. 11.
shorts for poultry, R 1913, p. 34.

Whipworms in cattle and goats, R 1925, p. 23; 1927, pp. 27, 28, 30.

White—

grubs, R 1918, p. 16.
headed fungus, B 10, p. 15.
scale. (See Chaff scale.)

Whitewash, insecticidal value, R 1905, p. 37.

Wiliwili, B 15, p. 15.

Windbreaks—

classification, B 10, p. 17; R 1907, p. 33.
for citrus, B 10, pp. 16, 35; B 33, pp. 19, 23; R 1905, p. 25; 1919, p. 8; 1920, p. 25.
for coffee, R 1909, p. 32; 1910, p. 37.
for orchards, R 1904, p. 388; 1906, p. 26.
(See also specific kinds.)

Winds—

effect on citrus, B 10, p. 19; R 1907, p. 32.
effect on coffee, R 1901, p. 400.
effect on mangoes, B 24, p. 6.
notes, B 3, p. 11; B 5, p. 17; R 1901, p. 389.

Wines, importation, R 1901, p. 395.
Wire frames for plant protection, B 2, p. 12; R 1902, p. 349.

Witches' broom, R 1903, p. 449.

Wood—

ashes, fertilizing value, R 1917, p. 28.
decay in the Tropics, R 1912, p. 10.

Woody fiber in cacao, R 1907, p. 47.

Woolly—

bear caterpillar. (See *Ecpanteria eridanus*.)
white fly on citrus, B 10, p. 11.

Worms—

on cabbage and yuca, R 1902, p. 343.
on collards, B 7, p. 33.
on Cruciferæ, R 1907, p. 35.

Xanthosoma—

atrovirens, B 6, p. 11.
hastifolium, B 6, p. 8.
sagittatum, B 6, p. 11.
violaceum, B 6, pp. 11, 15.

Xyleborus sp.—

on cane, R 1907, p. 37.
on coconuts, R 1905, p. 37.
on *Inga* sp., R 1906, p. 28; 1909, p. 28.

Xyleutes sp., on coffee, R 1928, p. 17.

Xyphidium fasciatum, R 1902, p. 347.

Yagrumo macho trees, R 1903, p. 438.

Yaguas. (See Royal palm.)

Yahutia. (See Yautias.)

Yam bean—

culture, R 1903, p. 433; 1904, p. 393.
starch, R 1904, p. 394.

Yams—

acreage, R 1901, p. 397; 1918, p. 21; 1919, p. 33.
culture, B 27, pp. 1-8, 10; R 1902, p. 337; 1904, p. 393; 1910, p. 29; 1911,

Yams—Continued.

p. 26; 1912, pp. 26, 43; 1914, p. 17; 1919, pp. 8, 21; 1921, pp. 10, 11; 1922, p. 5; 1923, p. 6; 1924, p. 14; 1928, p. 19.
diseases, R 1904, p. 398; 1925, p. 40.
fertilization, B 27, p. 8; R 1912, p. 26.
food value, B 27, p. 3.
insect pests, R 1903, pp. 447, 448.
propagation of cane-beetle fungus on, R 1912, pp. 36, 37.
starch, B 27, pp. 12, 13, 16, 17, 18, 19, 21; R 1911, p. 26.
varieties, B 27, pp. 11-21; R 1903, p. 433.

Yarey palm, R 1901, p. 385.

Yautia—

del jardin, B 6, p. 18.
del monte. (See *Dracontium asperum*.)
Panama, B 6, p. 18.

Yautias—

acreage, R 1918, p. 21; 1919, p. 33.
culture, B 6, pp. 1, 19, 21; R 1902, p. 337; 1904, p. 390; 1905, p. 21; 1910, p. 29; 1911, p. 26; 1912, p. 10, 26, 43; 1914, p. 17; 1921, p. 10, 11; 1922, p. 5; 1923, p. 6; 1924, p. 14; 1925, p. 13; 1928, p. 19.
description, B 6, p. 8.
diseases, B 6, p. 22; B 17, p. 13; R 1904, p. 398.

distribution geographically, B 6, p. 11.
fertilization, B 6, p. 20.
flour, B 6, p. 25; R 1905, p. 22.
food value, B 6, pp. 23, 24.
growing districts, B 3, pp. 31, 40.
harvesting, B 6, p. 21.
industry, B 6, p. 26.
insect pests, R 1903, p. 447.
keeping qualities, B 6, p. 22.
photoperiodism, R 1928, p. 18.
proportion of parts of plant, B 6, p. 18; R 1904, p. 391.
starch, B 6, p. 25; R 1904, p. 390.
varieties, B 6, pp. 12-18; R 1903, p. 432; 1904, p. 390.

Yaya tree, R 1903, p. 438.

Yeast cells, C 11, p. 7; C 12, p. 23.

Yellow fever, C 14, pp. 5, 6; C 20, pp. 3, 4.
Yellow fever mosquitoes. (See Mosquitoes.)

Yerba—

dulce as changa food, B 2, pp. 9, 13, 16; B 23, p. 7; R 1902, p. 349.
dulce insect pests, R 1921, p. 23.
hendional disease, B 28, p. 7.
rosario as cover crop, B 19, p. 23.

Yuca—

at Rio Piedras, R 1902, p. 337.
insect pests, R 1902, p. 343.

starch, R 1902, p. 340.

Zagrammosoma multilineata, R 1905, p. 22; 1914, p. 33.

Zanthoxylum clava-herculis. (See Espino tree.)

Zarzabacoa común as cover crop, B 19, p. 23.

Zarzabacoa galana as cover crop, B 19, p. 22.

Zea mays. (See Corn.)

Zebu. (See Cattle.)

Zinc—

arsenite, insecticidal and fungicidal value, C 17, p. 23.
sulphate for lame animals, R 1925, p. 24.

Zingiber officinale. (See Ginger.)

Zinnias—

culture, R 1923, p. 3; 1926, p. 10.
insect pests, R 1923, p. 14.

photoperiodism, R 1924, p. 11.

Zizyphus sp. (See Jujube.)

Zophobas morio, R 1926, p. 6.

Zorزال, B 23, p. 18.

Zorزال negro, B 23, p. 18.

Zwinga cane. (See Sugarcane.)

